

Westinghouse



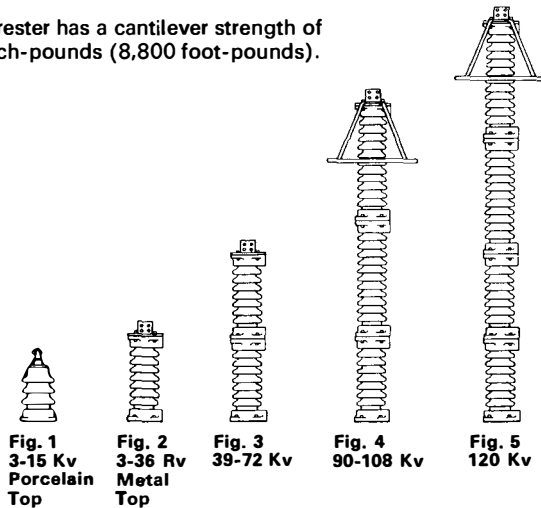
Station Class Autovalve® Surge Arresters Type SV

0 to 10000 Feet Altitude
Outdoor or Indoor, Single Pole
3 to 120 Kv, Self-Supporting

Electrical Characteristics

Type SV

Type SV arrester has a cantilever strength of 105,600 inch-pounds (8,800 foot-pounds).



Arrester Rating Maximum Permissible Line-to-Ground Kv Rms (Maximum Valve off or Maximum Reseal Rating)		Minimum 60 Cycle Sparkover	Maximum Switching Surge Sparkover	Maximum 100% 1 1/2 x 40 Impulse ^① Sparkover	Maximum Impulse Sparkover ASA Front- of-Wave	Maximum Discharge Voltage for Discharge Currents of 8 x 20 Microsecond Wave Shape with the Following Crest Amplitudes					
						1500 Amperes	3000 Amperes	5000 Amperes	10000 Amperes	20000 Amperes	40000 Amperes
Type SV	Fig. Ref.	Kv Rms	Kv Crest	Kv Crest	Kv Crest	Kv Crest	Kv Crest	Kv Crest	Kv Crest	Kv Crest	Kv Crest
3	1, 2	5	8	8	12	7	8	8.5	9	10	11.5
6	1, 2	11	17	17	24	15	16	17	19	20	23
9	1, 2	16	25	24	35	21	23	24	26	28	31.5
12	1, 2	22	34	32	45	28	30	32	35	38	42
15	1, 2	27	42	40	55	35	38	40	44	47	52.5
21	2	36	56	55	72	47	52	55	60	65	73
24	2	45	70	65	90	56	61	65	71	76	84
30	2	54	85	80	105	69	75	80	87	94	105
36	2	66	104	96	125	83	90	96	105	113	126
39	3	72	113	104	130	90	98	104	114	123	137
48	3	90	141	130	155	112	122	130	142	153	168
60	3	108	169	160	190	137	150	160	174	189	210
72	3	132	206	195	230	167	184	195	212	230	252
90	4	160	242	228	271	206	226	240	262	283	315
96	4	175	257	247	294	222	242	258	280	304	336
108	4	195	294	266	332	244	264	282	316	333	378
120	5	220	323	304	370	275	301	320	350	378	420

① IEC Standard 99-1.

Further Information

Description: DB 38-121

Pricing: PL 38-120

Dimensions: DS 38-122

December, 1973

Supersedes Performance Data 38-126, pages 1-2,
dated June, 1970
E, D, C/1981/DB

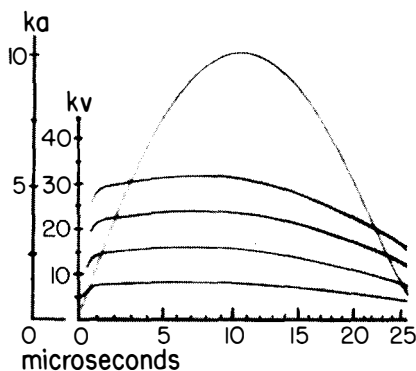
Station Class Autovalve® Surge Arresters Type SV

0 to 10000 Feet Altitude
Outdoor or Indoor, Single Pole
3 to 120 Kv, Self-Supporting

Discharge Voltage Characteristics

3 to 12 Kv, 10,000 Amperes

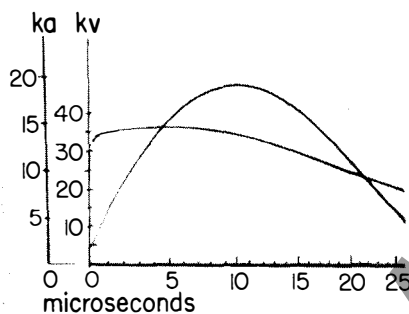
C234I-24



Discharge voltage characteristics for 3, 6, 9 and 12 kv arresters at 10,000 amperes surge current showing proportionality of characteristics to voltage ratings.

12 Kv, 20,000 Amperes

C26I2-2

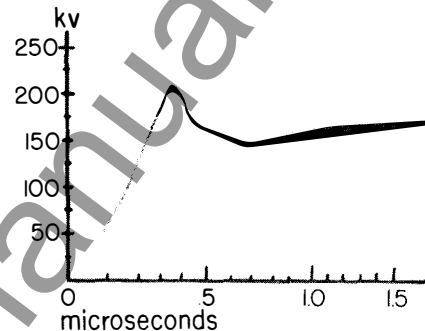


Discharge voltage characteristics for a 12 kv arrester discharging a surge current of 20,000 amperes.

Impulse Sparkover - Front of Wave

72 Kv

C24II-22

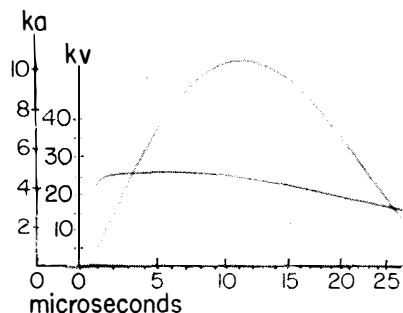


Impulse sparkover oscillogram for a 72 kv arrester on a voltage rising at a nominal rate of 100 kv per microsecond per 12 kv of arrester rating.

Duty Cycle Test 5 9 Kv Arrester discharge voltage

Before Test

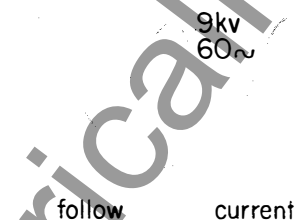
C26I2-5



Discharge voltage characteristics for a 9 kv arrester discharging a surge current of 10,000 amperes, prior to duty cycle test.

Operating Cycle

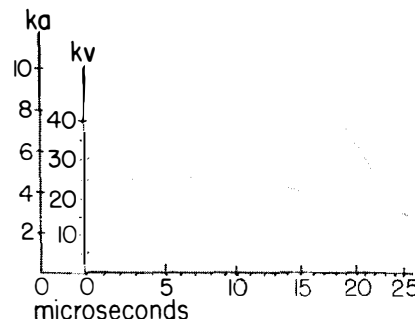
M7462I-I



Follow current and power frequency voltage oscillogram for a 9 kv arrester under duty cycle test at 10,000 amperes.

After Test

C26I2-6

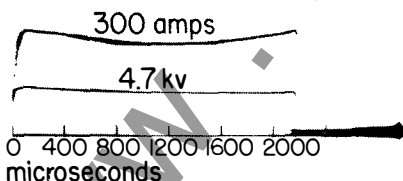


Discharge voltage characteristics for a 9 kv arrester discharging a surge current of 10,000 amperes, after 20th duty cycle operation.

Discharge Current Withstand Tests Low current long duration surges

3 Kv, First Surge

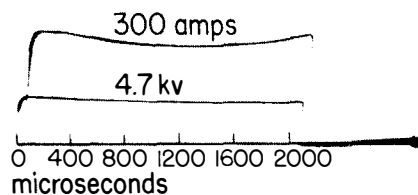
C2368-35-I



Volt-time oscillogram for a 3 kv arrester discharging the first surge of a current not less than 150 amperes, 2000 microseconds duration.

3 Kv, 20th Surge

C2368-35-20

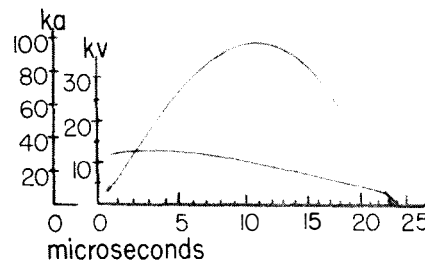


Volt-time oscillogram of a 3 kv arrester discharging the 20th surge of a current not less than 150 amperes, 2000 microseconds duration.

High current short duration surges

3 Kv, 100,000 Amperes

C2372-27



Ampere-time and volt-time oscillograms for a 3 kv arrester discharging the two current surges greater than 100,000 amperes.

Westinghouse



Autovalve® Lightning Arresters

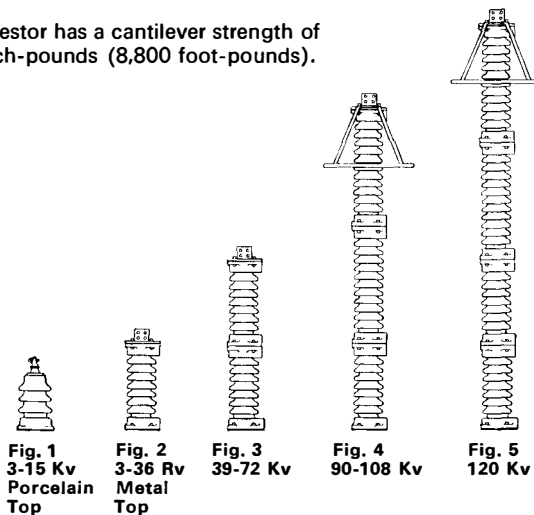
Station Class Types SV, SVS

0 to 10000 Feet Altitude
Outdoor or Indoor, Single Pole
3 to 240 Kv, Self-Supporting

Electrical Characteristics

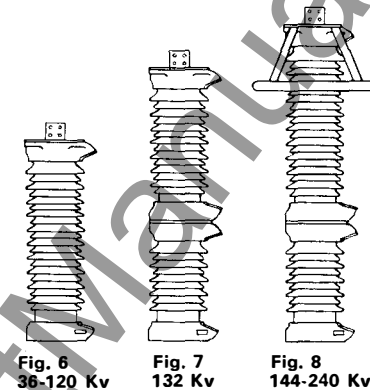
Type SV

Type SV arrester has a cantilever strength of 105,600 inch-pounds (8,800 foot-pounds).



Type SVS

Type SVS arrester has a cantilever strength of 300,000 inch-pounds (25,000 foot-pounds).



Arrester Rating
Maximum Permissible Line-to-Ground Kv Rms (Maximum Valve off or Maximum Reseal Rating)

Type SV	Fig. Ref.	Type SVS	Fig. Ref.	Minimum 60 Cycle Sparkover	Maximum Switching Surge Sparkover	Maximum 100% 1½ x 40 Impulse ^① Sparkover	Maximum Impulse Sparkover ASA Front-of-Wave	Maximum Discharge Voltage for Discharge Currents of 8 x 20 Microsecond Wave Shape with the Following Crest Amplitudes					
				Kv Rms	Kv Crest	Kv Crest	Kv Crest	1500 Amperes	3000 Amperes	5000 Amperes	10000 Amperes	20000 Amperes	40000 Amperes
3	1, 2	...	..	5	8	8	12	7	8	8.5	9	10	11.5
6	1, 2	...	..	11	17	17	24	15	16	17	19	20	23
9	1, 2	...	..	16	25	24	35	21	23	24	26	28	31.5
12	1, 2	...	..	22	34	32	45	28	30	32	35	38	42
15	1, 2	...	..	27	42	40	55	35	38	40	44	47	52.5
21	2	...	..	36	56	55	72	47	52	55	60	65	73
24	2	...	..	45	70	65	90	56	61	65	71	76	84
30	2	...	..	54	85	80	105	69	75	80	87	94	105
36	2	36	6	66	104	96	125	83	90	96	105	113	126
39	3	...	..	72	113	104	130	90	98	104	114	123	137
48	3	48	6	90	141	130	155	112	122	130	142	153	168
60	3	60	6	108	169	160	190	137	150	160	174	189	210
72	3	72	6	132	206	195	230	167	184	195	212	230	252
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108	4	108	6	195	294	266	332	244	264	282	316	333	378
120	5	120	6	220	323	304	370	275	301	320	350	378	420
...	..	132	7	240	356	333	408	300	328	350	380	410	462
...	..	144	8	260	389	357	437	324	350	375	408	440	504
...	..	168	8	305	451	428	513	386	423	450	490	530	588
...	..	180	8	330	489	447	556	405	440	470	510	552	630
...	..	192	8	350	523	475	580	430	470	500	545	588	672
...	..	240	8	435	646	608	731	550	602	640	695	755	840

^① IEC Standard 99-1.

Further Information

Description: DB 38-121

Pricing: PL 38-120

Dimensions: DS 38-122

Autovalve® Lightning Arresters

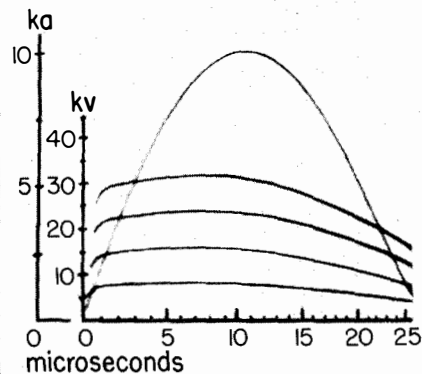
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Discharge Voltage Characteristics

3 to 12 Kv, 10,000 Amperes

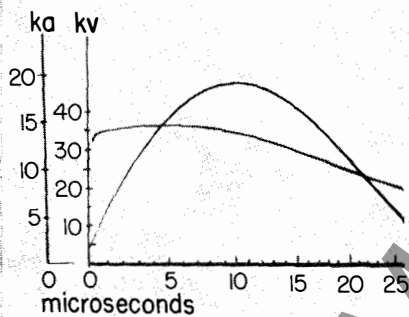
C2341-24



Discharge voltage characteristics for 3, 6, 9 and 12 kv arresters at 10,000 amperes surge current showing proportionality of characteristics to voltage ratings.

12 Kv, 20,000 Amperes

C2612-2

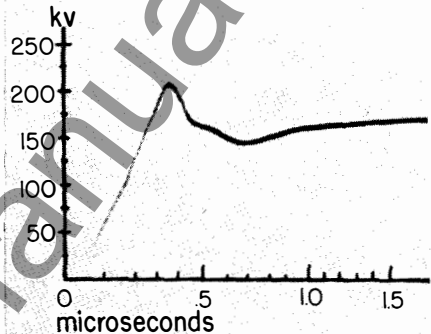


Discharge voltage characteristics for a 12 kv arrester discharging a surge current of 20,000 amperes.

Impulse Sparkover - Front of Wave

72 Kv

C2411-22

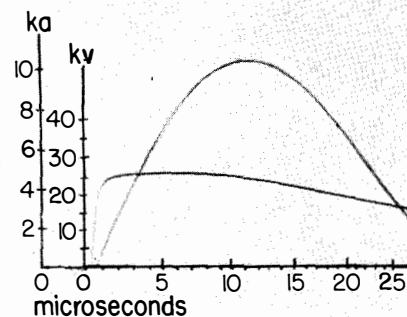


Impulse sparkover oscillogram for a 72 kv arrester on a voltage rising at a nominal rate of 100 kv per microsecond per 12 kv of arrester rating.

Duty Cycle Test 5 9 Kv Arrester discharge voltage

Before Test

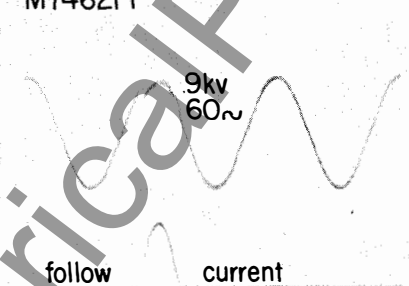
C2612-5



Discharge voltage characteristics for a 9 kv arrester discharging a surge current of 10,000 amperes, prior to duty cycle test.

Operating Cycle

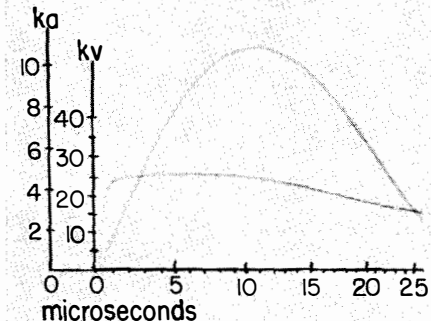
M74621-1



Follow current and power frequency voltage oscillogram for a 9 kv arrester under duty cycle test at 10,000 amperes.

After Test

C2612-6

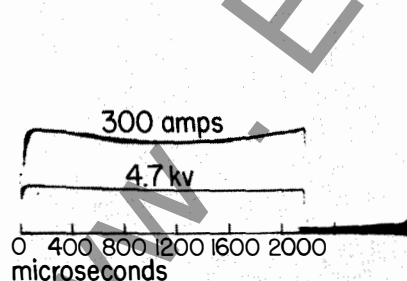


Discharge voltage characteristics for a 9 kv arrester discharging a surge current of 10,000 amperes, after 20th duty cycle operation.

Discharge Current Withstand Tests Low current long duration surges

3 Kv, First Surge

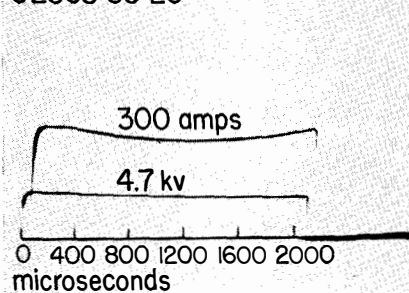
C2368-35-1



Volt-time oscillogram for a 3 kv arrester discharging the first surge of a current net less than 150 amperes, 2000 microseconds duration.

3 Kv, 20th Surge

C2368-35-20

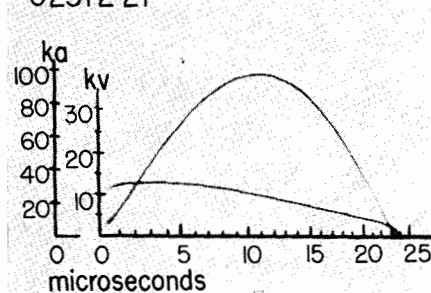


Volt-time oscillogram of a 3 kv arrester discharging the 20th surge of a current not less than 150 amperes, 2000 microseconds duration.

High current short duration surges

3 Kv, 100,000 Amperes

C2372-27



Ampere-time and volt-time oscillograms for a 3 kv arrester discharging the two current surges greater than 100,000 amperes.

Westinghouse Electric Corporation

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