IEC Certified Arrester QuickFacts

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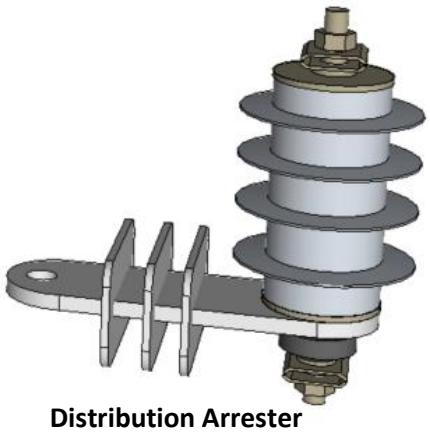
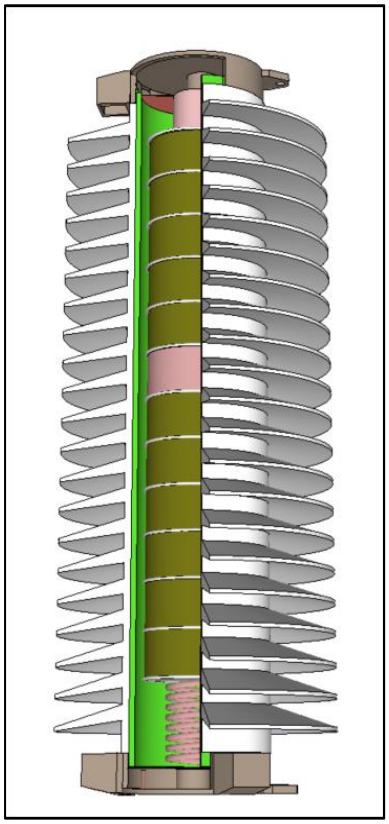


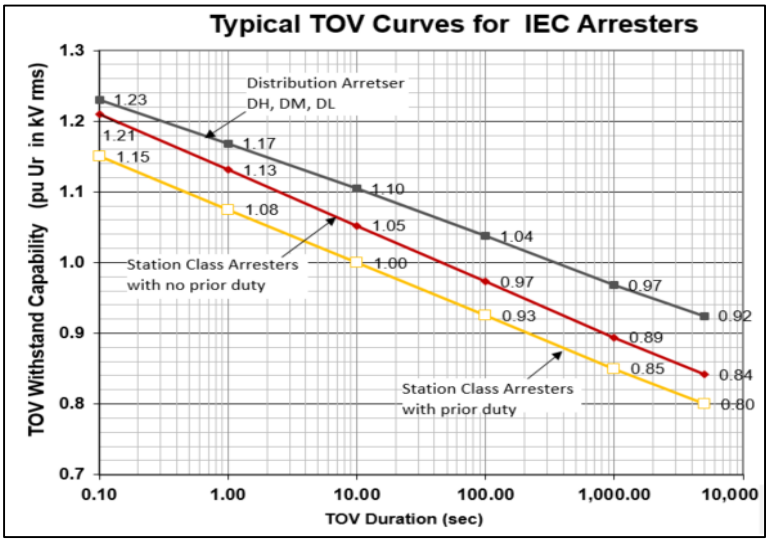
Distribution Arrester

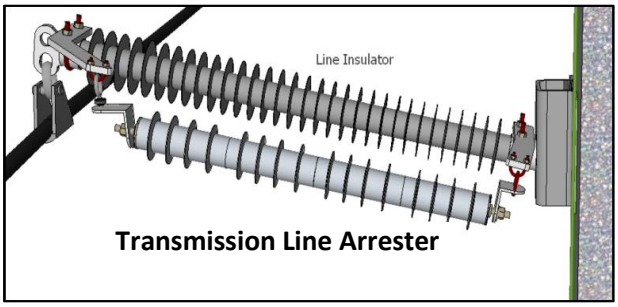
Arrester Classifications IEC					
Arresters	Nominal Discharge Current	Switching Impulse Discharge Current	Minimum Single Impulse Charge Q_{rs}	Minimum Thermal Energy Withstand Q_{th}	Maximum Short Circuit Withstand
Distribution	kA	kA	Coulombs	Coulombs	kA_{sym}
DH	10	na	≥ .4	≥ 1.1	~20
DM	5	na	≥ .2	≥ .7	~20
DL	2.5	na	≥ .1	≥ .45	~20
Station	kA	kA	Coulombs	W_{th} kJ/kV	kA_{sym}
SH	20	2	≥ 2.4	≥ 10	~63
SM	10	1	≥1.6	≥ .4	~63
SL	10	0.5	≥1.0	≥ .4	~63

Highest System Voltage Us (kV)	Minimum Arrester Rated Voltage (Ur)				
	Solidly Earthed Neutral at Source Transformer (kV)	Isolated Neutral at Source Transformer (kV)	Impedance Earthed Neutral at Source Transformer (kV)	Resonant Earthed Neutral at source Transformer (kV)	Neutral Protection of Transformers (kV)
3.6	3	6	3	6	3
7.2	6	9	9	9	3
12	9	15	12	15	6
17.5	15	24	15	24	9
24	18	30	21	30	12
36	27	45	33	45	15
52	39	66	45	66	21
72.5	54	96	66	96	30
123	90	154	108	154	51
145	108	183	126	183	60
170	123	216	147	216	69
245	180				102
300	222				120
362	261				147
420	336				168
550	396				222
800	580				321



Hollow Core Polymer Housed Station Arrester





Transmission Line Arrester

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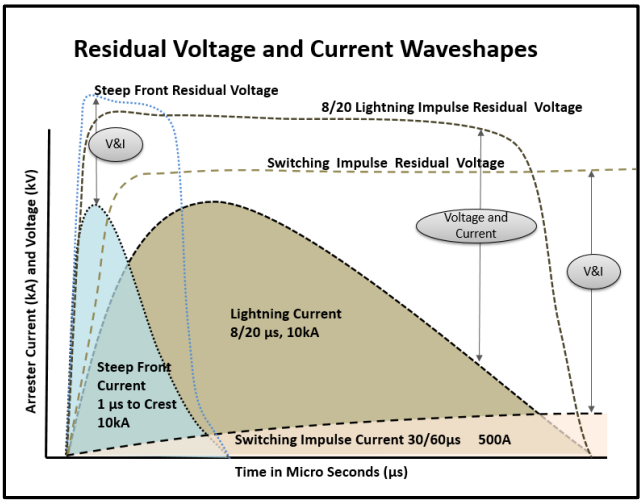
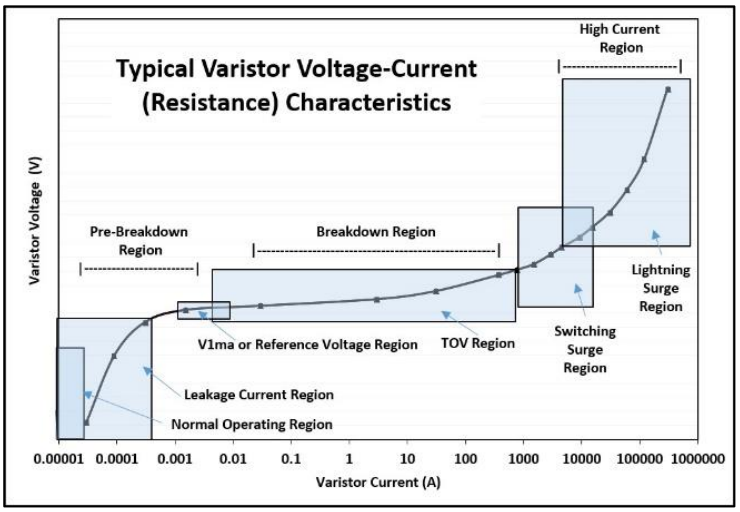
Typical Residual Voltage Table											
Arrester Rating U_r	Arrester U_c	TOV (kV rms)		Steep Current Impulse Residual Voltage (kV peak) .5/10 µs current wave	Maximum Residual Voltage (kV peak) 8/20 µs Current Wave					Switching Impulse Residual (kV peak) 30/60µs current wave	
kV rms	kV rms	1 Sec	10 Sec	10kA	1.0kA	3kA	5kA	10kA	20kA		
Distribution Arrester DH										125 A	500 A
3	2.4	3.5	3.3	8.5	6.4	7.1	7.4	8.0	9.2	5.8	6.1
6	4.8	6.9	6.5	16.8	12.7	14.1	14.8	15.9	18.3	11.4	12.2
9	7.2	10.4	9.8	25.3	19.1	21.2	22.2	23.9	27.5	17.2	18.3
12	9.6	13.9	13.1	33.7	25.4	28.2	29.5	31.8	36.6	22.9	24.4
15	12.0	17.3	16.4	42.1	31.8	35.3	37.0	39.8	45.8	28.6	30.5
18	14.4	20.8	19.6	50.6	38.2	42.4	44.4	47.8	55.0	34.4	36.7
21	16.8	24.3	22.9	59.0	44.5	49.4	51.8	55.6	64.1	40.1	42.7
24	19.2	27.7	26.2	67.4	50.9	56.5	59.2	63.6	73.3	45.8	48.9
27	21.6	31.2	29.4	62.5	47.2	52.4	54.9	59.0	68.0	42.5	45.3
30	24.0	34.7	32.7	84.3	63.6	70.6	74.0	79.5	91.6	57.2	61.1
33	26.4	38.1	36.0	92.8	70.0	77.7	81.4	87.5	100.8	63.0	67.2
36	28.8	41.6	39.2	101.1	76.3	84.7	88.7	95.4	109.9	68.7	73.2
Station Class Arresters (W_{th} 4-7 kJ/kV U_r)										250 A	1000 A
54	43	61	57	135	104	112	119	127	134	100	106
60	48	68	63	154	118	128	136	145	153	115	121
72	58	81	76	172	132	143	151	162	171	128	135
96	77	108	101	229	176	190	202	216	227	171	180
108	86	122	113	258	198	214	227	243	256	192	203
120	96	136	126	286	220	238	252	270	284	214	225
144	115	163	151	343	264	286	303	324	341	256	270
150	120	170	158	358	275	298	316	338	356	267	282
192	154	217	202	458	352	381	404	432	455	342	361
198	158	224	208	473	363	393	417	446	470	353	372
228	182	258	239	543	417	451	479	512	539	405	427
Station Class Arresters (W_{th} 7-10 kJ/kV U_r)										500 A	2000 A
240	192	271	252	572	440	476	505	540	568	437	470
276	221	312	290	658	506	548	581	621	654	502	540
336	269	380	353	801	616	667	707	756	796	612	658
360	288	407	378	859	660	714	757	810	853	655	705
420	336	475	441	1068	822	889	942	1008	1061	815	877

* Includes the effects of Inductance on all components in the arrester