

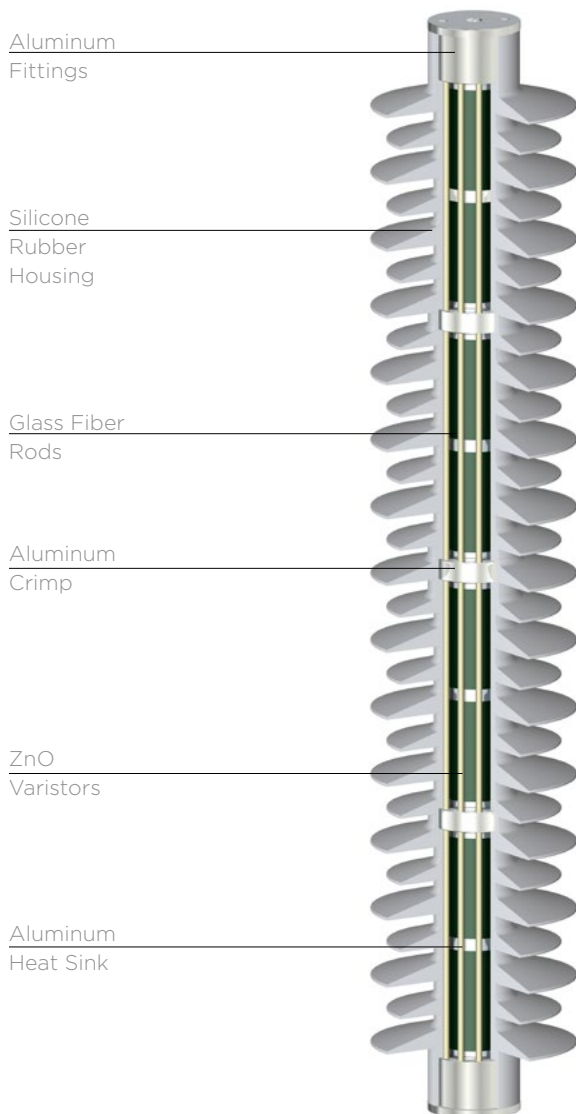


BOWTHORPE EMP

POLYMERIC SURGE ARRESTERS (IEEE)

ADVANCED OVER VOLTAGE PROTECTION

TE Connectivity (TE) has leveraged decades of design and development experience to create the single column high voltage surge arrester series, designed to protect power equipment and apparatus from lightning and switching over voltages.



Qualification Testing

The basic construction comprises ZnO varistors assembled within an open cage design. The following IEEE C62.11 design type tests have been carried out on all polymeric surge arresters.

Tests performed on metal oxide blocks:

- Discharge - voltage characteristics test
- Single impulse withstand rating test
- Accelerated aging test
- Switching surge energy rating test
- Duty cycle test
- Temporary over voltage test

Tests performed on complete surge arresters:

- Contamination test (PAA)
- Bending moment test
- Internal partial discharge test
- Short-circuit test
- Weather aging 1000 hour test

Insulation withstand tests on surge arrester housing:

- Dry Lightning impulse voltage withstand test
- Wet Power frequency voltage withstand test
- Wet Switching Impulse voltage withstand test (PBA)

Technical Data

		PAA	PBA	PCA
Maximum System Voltage U _{max}	kV	145	242	420
System Voltage U _{nom}	kV	138	230	400
Lightning impulse classifying current:	kA	5	10	10
High current impulse (4/10 μs)	kA	65	100	100
Energy rating class		B	D	E
Switching surge energy rating	kJ/kV MCOV	5.2	7.8	9.5
Rated short circuit current	kA	40	65	65
Cantilever load*				
Maximum design cantilever load	lbf.in	2212	5310	17701
Ultimate strength	lbf.in	3098	8851	21227

* As defined in IEEE C62.11 December 2012

Electrical Performance

Maximum System Voltage U _m (kV)	Duty cycle voltage U _r (kV)	Energy rating class	Long Duration Current 2000 μs (A)	Lightning impulse classifying current (8/20 μs) (kA)	High current impulse 4/10 μs (kA)	Switching surge energy rating (kJ/kV) MCOV	Arrester Type
15	9 - 15	B	500	5	65	5.2	PAA
		D	680	10	100	7.8	PBA
		E	760	10	100	9.5	PCA
26.5	18 - 30	B	500	5	65	5.2	PAA
		D	680	10	100	7.8	PBA
		E	760	10	100	9.5	PCA
36.2	27 - 42	B	500	5	65	5.2	PAA
		D	680	10	100	7.8	PBA
		E	760	10	100	9.5	PCA
48.3	36 - 54	B	500	5	65	5.2	PAA
		D	680	10	100	7.8	PBA
		E	760	10	100	9.5	PCA
72.5	54 - 75	B	500	5	65	5.2	PAA
		D	680	10	100	7.8	PBA
		E	760	10	100	9.5	PCA
121	96 - 120	D	680	10	100	7.8	PBA
		E	760	10	100	9.5	PCA
145	108 - 132	D	680	10	100	7.8	PBA
		E	760	10	100	9.5	PCA
169	138 - 150	D	680	10	100	7.8	PBA
		E	760	10	100	9.5	PCA
242	180 - 216	D	680	10	100	7.8	PBA
362	258 - 312	E	760	10	100	9.5	PCA

Electrical Characteristics

Maximum System Voltage Um kV	Duty cycle voltage Ur kV	MCOV kV	Energy rating Class	Max. Ures tested with current wave										Normalized FOW discharge voltage (1/20 μs)	
				Switching impulse discharge voltage (45/90 μs)				Normalized lightning impulse discharge voltage (8/20 μs)						5 kA	10 kA
				250 A kV	500 A kV	1000 A kV	2000 A kV	1.5 kA kV	3 kA kV	5 kA kV	10 kA kV	20 kA kV	5 kA kV	10 kA kV	
15	12	10.2	B	25.2	26.0	27.0	-	27.9	29.4	30.7	33.0	36.3	33.6	-	
	15	12.7	B	31.0	32.0	33.2	-	34.2	36.0	37.6	40.5	44.6	41.3	-	
	9	7.65	D	20.2	21.0	21.9	23.1	23.5	24.9	25.7	27.9	30.9	-	30.9	
	12	10.2	D	29.6	30.7	32.1	33.8	34.5	36.5	37.7	40.9	45.4	-	45.2	
	15	12.7	D	30.3	31.4	32.8	34.6	35.3	37.3	38.5	41.8	46.4	-	46.2	
	9	7.65	E	22.0	22.8	23.4	24.5	-	-	26.5	28.2	31.0	-	30.7	
	12	10.2	E	32.1	33.3	34.1	35.8	-	-	38.6	41.1	45.2	-	44.8	
	15	12.7	E	34.3	33.6	36.5	38.3	-	-	41.4	44.4	48.4	-	48.0	
26.2	18	15.3	B	37.9	39.1	40.5	-	41.8	44.1	46.0	49.5	54.5	50.4	-	
	21	17.0	B	41.0	42.3	43.9	-	45.2	47.7	49.8	53.6	59.0	54.6	-	
	24	19.5	B	48.2	49.7	51.6	-	53.2	56.1	58.5	63.0	69.3	64.2	-	
	27	22.0	B	53.6	55.3	57.4	-	59.2	62.4	65.1	70.1	77.1	71.4	-	
	30	24.4	B	58.8	60.6	62.9	-	64.8	68.4	71.3	76.8	84.5	78.3	-	
	18	15.3	D	39.5	41.0	42.8	45.2	46.1	48.7	50.3	54.6	60.6	-	60.4	
	21	17.0	D	47.9	49.7	51.9	54.7	55.9	59.1	61.0	66.2	73.4	-	73.2	
	24	19.5	D	50.5	52.3	54.6	57.6	58.8	62.2	64.3	69.7	77.3	-	77.1	
	27	22.0	D	59.2	61.4	64.1	67.6	69.0	73.0	75.4	81.8	90.7	-	90.5	
	30	24.4	D	60.5	62.8	65.5	69.1	70.6	74.6	77.1	83.6	92.7	-	92.5	
	18	15.3	E	44.5	46.2	47.3	49.6	-	-	53.6	57.0	62.7	-	62.1	
	21	17.0	E	45.2	47.0	48.1	50.5	-	-	54.5	58.0	63.8	-	63.2	
	24	19.5	E	55.4	57.5	58.9	61.8	-	-	66.7	71.0	78.1	-	77.4	
	27	22.0	E	60.1	62.4	63.9	67.0	-	-	72.4	77.0	84.7	-	83.9	
30	24.4	E	66.3	68.9	70.6	74.0	-	-	79.9	85.0	93.5	-	92.7		
36.2	30	24.4	B	58.8	60.6	62.9	-	64.8	68.4	71.3	76.8	84.5	78.3	-	
	36	29.0	B	70.8	73.1	75.8	-	78.2	82.4	86.0	92.6	102	94.4	-	
	45	36.5	B	89.5	92.3	95.8	-	98.7	104	109	117	129	119	-	
	30	24.4	D	60.5	62.8	65.5	69.1	70.6	74.6	77.1	83.6	92.7	-	92.5	
	36	29.0	D	74.4	77.1	80.5	85.0	86.7	91.6	94.7	103	114	-	114	
	42	34.0	D	84.0	87.1	90.9	95.9	97.9	103	107	116	129	-	128	
	30	24.4	E	66.3	68.9	70.6	74.0	-	-	79.9	85.0	93.5	-	92.7	
	36	29.0	E	77.2	80.2	82.2	86.1	-	-	83.1	99.0	109	-	108	
42	34.0	E	87.4	90.7	93.0	97.4	-	-	105	112	123	-	122		

* "TOV" curves are given on technical data sheets for selected surge arrester (on request)

Surge arresters with other characteristics are available on request

Mechanical Characteristics

TOV Capability (without prior energy)		Leakage distance	Overall height	Minimum distance between phase centers	Minimum distance between phase to ground	Cantilever load		Weight	Drawing Reference M7	Product code
1 sec* Tc	10 sec* Tc					Maximum design cantilever load lbf.in	Ultimate strength lbf.in			
kV	kV									
14.4	13.8	25.9	13.8	12.6	3.54	2212	3098	8.8	BOW-34-042	PAA0-12
17.9	17.2	25.9	13.8	12.6	3.54	2212	3098	8.8	BOW-34-042	PAA0-12
10.3	9.8	52.7	17.7	12.6	2.36	5310	8851	15.4	BOW-33-037	PBA1-9
13.7	13.1	52.7	17.7	12.6	3.54	5310	8851	15.4	BOW-33-037	PBA1-12
17.1	16.4	52.7	17.7	12.6	3.54	5310	8851	15.4	BOW-33-037	PBA1-15
10.4	10.2	43.3	15.7	12.6	2.40	17701	21227	22.0	BOW-28-137	PCA1-9
13.8	13.1	43.3	15.7	12.6	3.50	17701	21227	22.0	BOW-28-137	PCA1-12
17.2	16.4	43.3	15.7	12.6	3.50	17701	21227	22.0	BOW-28-137	PCA1-15
21.6	20.7	25.9	13.8	12.6	4.72	2212	3098	8.8	BOW-34-042	PAA0-18
24.0	23.1	25.9	13.8	12.6	4.72	2212	3098	8.8	BOW-34-042	PAA0-21
27.5	26.4	25.9	13.8	12.6	4.72	2212	3098	8.8	BOW-34-042	PAA0-24
31.0	29.8	44.3	14.8	12.6	8.65	2212	3098	12.1	BOW-34-042	PAA2-27
34.4	33.1	44.3	14.8	12.6	8.65	2212	3098	12.1	BOW-34-042	PAA2-30
20.5	19.6	52.7	17.7	12.6	4.72	5310	8851	15.4	BOW-33-037	PBA1-18
23.9	22.9	52.7	17.7	12.6	6.30	5310	8851	15.4	BOW-33-037	PBA1-21
27.4	26.2	52.7	17.7	12.6	6.30	5310	8851	15.4	BOW-33-037	PBA1-24
30.8	29.4	52.7	17.7	12.6	8.66	5310	8851	15.4	BOW-33-037	PBA1-27
34.2	32.7	52.7	17.7	12.6	8.66	5310	8851	15.4	BOW-33-037	PBA1-30
20.7	19.6	43.3	15.7	12.6	4.70	17701	21227	22.0	BOW-28-137	PCA1-18
24.2	22.9	43.3	15.7	12.6	6.30	17701	21227	22.0	BOW-28-137	PCA1-21
27.6	26.2	43.3	15.7	12.6	6.30	17701	21227	22.0	BOW-28-137	PCA1-24
31.1	29.4	43.3	15.7	12.6	8.70	17701	21227	22.0	BOW-28-137	PCA1-27
34.5	32.7	43.3	15.7	12.6	8.70	17701	21227	22.0	BOW-28-137	PCA1-30
34.4	33.1	44.3	14.8	12.6	8.65	2212	3098	12.1	BOW-34-042	PAA2-30
40.9	39.3	44.3	14.8	12.6	8.65	2212	3098	12.1	BOW-34-042	PAA2-36
51.5	49.5	44.3	14.8	15.2	12.6	2212	3098	12.1	BOW-34-042	PAA2-45
34.2	32.7	52.7	17.7	12.6	8.66	5310	8851	15.4	BOW-33-037	PBA1-30
41.0	39.2	52.7	17.7	13.7	10.6	5310	8851	15.4	BOW-33-037	PBA1-36
47.9	45.8	52.7	17.7	13.7	12.6	5310	8851	15.4	BOW-33-037	PBA1-42
34.5	32.7	43.3	15.7	12.6	8.70	17701	21227	22.0	BOW-28-137	PCA1-30
41.4	39.2	43.3	15.7	14.2	10.6	17701	21227	22.0	BOW-28-137	PCA1-36
48.3	45.8	43.3	15.7	16.1	12.6	17701	21227	22.0	BOW-28-137	PCA1-42

Electrical Characteristics

Maximum System Voltage Um kV	Duty cycle voltage Ur kV	MCOV kV	Energy rating Class	Max. Ures tested with current wave										Normalized FOW discharge voltage (1/20 μs)	
				Switching impulse discharge voltage (45/90 μs)				Normalized lightning impulse discharge voltage (8/20 μs)							
				250 A kV	500 A kV	1000 A kV	2000 A kV	1.5 kA kV	3 kA kV	5 kA kV	10 kA kV	20 kA kV	5 kA kV	10 kA kV	
48.3	36	29.0	B	70.8	73.1	75.8	-	78.2	82.4	86.0	92.6	102	94.4	-	
	39	31.5	B	76.5	78.9	81.9	-	84.4	89.0	92.9	100	110	102	-	
	48	39.0	B	94.1	97.0	101	-	104	109	114	123	135	126	-	
	36	29.0	D	74.4	77.1	80.5	85.0	86.7	91.6	94.7	103	114	-	114	
	39	31.5	D	79.6	82.6	86.2	91.0	92.8	98.1	101	110	122	-	122	
	48	39.0	D	93.4	96.9	101	107	109	115	119	129	143	-	143	
	54	42.0	D	106	110	114	121	123	130	135	146	162	-	161	
	36	29.0	E	77.2	80.2	82.2	86.1	-	-	93.1	99.0	109	-	108	
	39	31.5	E	84.2	87.6	89.6	94.0	-	-	102	108	119	-	118	
	48	39.0	E	96.7	100	108	112	-	-	117	124	136	-	135	
54	42.0	E	109	113	116	122	-	-	132	140	154	-	153		
72.5	60	48.0	D	115	119	125	131	134	142	147	159	176	-	176	
	72	57.0	D	138	143	150	158	161	170	176	191	212	-	211	
	75	60.0	D	144	149	156	165	168	178	183	199	221	-	220	
	60	48.0	E	119	123	126	132	-	-	143	152	167	-	166	
	72	57.0	E	137	143	146	153	-	-	165	176	194	-	192	
	75	60.0	E	145	151	154	162	-	-	175	186	205	-	203	
121	96	76.0	D	185	192	200	211	215	227	235	255	283	-	282	
	108	84.0	D	206	214	223	236	241	254	263	285	316	-	315	
	120	98.0	D	224	233	243	256	262	277	286	310	344	-	343	
	96	76.0	E	187	194	199	209	-	-	226	240	264	-	262	
	108	84.0	E	209	217	222	233	-	-	252	268	295	-	292	
	120	98.0	E	225	233	239	251	-	-	271	288	317	-	314	
145	108	84.0	D	206	214	223	236	241	254	263	285	316	-	282	
	120	98.0	D	224	233	243	256	262	277	286	310	344	-	343	
	132	106	D	254	264	275	290	296	313	324	351	389	-	388	
	108	84.0	E	209	217	222	233	-	-	252	268	295	-	292	
	120	98.0	E	225	233	239	251	-	-	271	288	317	-	314	
	132	106	E	254	263	270	283	-	-	306	325	358	-	354	

* "TOV" curves are given on technical data sheets for selected surge arrester (on request)

Surge arresters with other characteristics are available on request

Mechanical Characteristics

TOV Capability (without prior energy)		Leakage distance	Overall height	Minimum distance between phase centers	Minimum distance between phase to ground	Cantilever load		Weight	Drawing Reference M7	Product code
1 sec* Tc	10 sec* Tc					Maximum design cantilever load	Ultimate strength			
kV	kV	in	in	in	in	lbf.in	lbf.in	lbs		
40.9	39.3	44.3	14.8	12.6	8.65	2212	3098	12.1	BOW-34-042	PAA2-36
44.4	42.7	44.3	14.8	13.2	10.6	2212	3098	12.1	BOW-34-042	PAA2-39
55.0	52.9	44.3	14.8	21.5	18.9	2212	3098	12.1	BOW-34-042	PAA2-48
41.3	40.5	52.8	17.7	13.7	10.6	5310	8851	15.4	BOW-33-037	PBA1-36
44.9	44.0	52.8	17.7	13.7	10.6	5310	8851	15.4	BOW-33-037	PBA1-39
55.6	54.4	76.7	23.8	15.8	12.6	5310	8851	22.0	BOW-33-038	PBA2-48
59.8	58.6	76.7	23.8	22.0	18.9	5310	8851	22.0	BOW-33-038	PBA2-54
41.5	39.4	43.3	15.8	14.2	10.6	17701	21227	22.0	BOW-28-137	PCA1-36
45.0	42.8	43.3	15.8	14.2	10.6	17701	21227	22.0	BOW-28-127	PCA1-39
55.8	53.0	88.6	23.2	16.1	12.6	17701	21227	33.0	BOW-28-128	PCA2E-48
60.1	57.1	88.6	23.2	22.4	18.9	17701	21227	33.0	BOW-28-128	PCA2E-54
68.4	65.4	76.7	23.8	22.0	18.9	5310	8851	22.0	BOW-33-039	PBA2-60
82.1	78.5	152	43.1	27.9	24.8	5310	8851	40.7	BOW-33-039	PBA3-72
85.5	81.8	152	43.1	27.9	24.8	5310	8851	40.7	BOW-33-039	PBA3-75
69.0	65.4	88.5	23.2	22.4	18.9	17701	21227	33.0	BOW-28-128	PCA2E-60
82.8	78.5	177	42.7	22.4	18.9	17701	21227	60.6	BOW-28-129	PCA3E-72
86.3	81.8	177	42.7	22.4	24.8	17701	21227	60.6	BOW-28-129	PCA3E-75
109	105	152	43.1	38.5	35.4	5310	8851	40.7	BOW-33-039	PBA3-96
123	118	152	43.1	38.5	35.4	5310	8851	40.7	BOW-33-039	PBA3-108
137	131	152	43.1	38.5	35.4	5310	8851	40.7	BOW-33-039	PBA3-120
110	105	177	42.7	22.4	24.8	17701	21227	60.6	BOW-28-129	PCA3E-96
124	118	177	42.7	39.0	35.4	17701	21227	60.6	BOW-28-129	PCA3E-108
138	131	177	42.7	39.0	35.4	17701	21227	60.6	BOW-22-139	PCA3E-120
123	118	152	43.1	38.5	35.4	5310	8851	40.7	BOW-33-039	PBA3-108
137	131	152	43.1	38.5	35.4	5310	8851	40.7	BOW-33-039	PBA3-120
150	144	205	60.8	71.2	43.3	5310	8851	56.1	BOW-33-040	PBA31-132
124	118	177	42.7	39.0	35.4	17701	21227	60.6	BOW-28-129	PCA3E-108
138	131	177	42.7	39.0	35.4	17701	21227	60.6	BOW-28-129	PCA3E-120
152	144	177	42.7	39.0	35.4	17701	21227	60.6	BOW-28-129	PCA3E-132

Electrical Characteristics

Maximum System Voltage Um kV	Duty cycle voltage Ur kV	MCOV kV	Energy rating Class	Max. Ures tested with current wave										Normalized FOW discharge voltage (1/20 μs)	
				Switching impulse discharge voltage (45/90 μs)				Normalized lightning impulse discharge voltage (8/20 μs)							
				250 A kV	500 A kV	1000 A kV	2000 A kV	1.5 kA kV	3 kA kV	5 kA kV	10 kA kV	20 kA kV	5 kA kV	10 kA kV	
169	138	110	D	264	274	286	302	308	325	336	365	404	-	403	
	144	115	D	275	285	298	314	320	339	350	380	421	-	420	
	150	120	D	285	296	309	326	332	351	363	394	437	-	435	
	138	110	E	269	279	286	300	-	-	324	345	380	-	376	
	144	115	E	280	291	298	312	-	-	337	359	395	-	391	
	150	120	E	298	309	317	332	-	-	359	382	420	-	416	
242	180	144	E	343	356	365	383	-	-	414	446	484	-	480	
	192	152	E	372	386	396	415	-	-	448	477	525	-	520	
	198	158	E	377	391	401	420	-	-	454	483	531	-	526	
	216	173	E	412	428	438	459	-	-	496	528	581	-	576	
362	258	209	E	507	527	540	566	-	-	611	650	715	-	709	
	264	212	E	518	538	551	578	-	-	624	664	730	-	724	
	276	220	E	537	558	572	599	-	-	648	689	758	-	751	
	288	230	E	555	577	591	619	-	-	669	712	783	-	776	
	300	240	E	584	607	622	652	-	-	704	749	824	-	921	
	312	245	E	604	627	642	673	-	-	728	774	851	-	844	

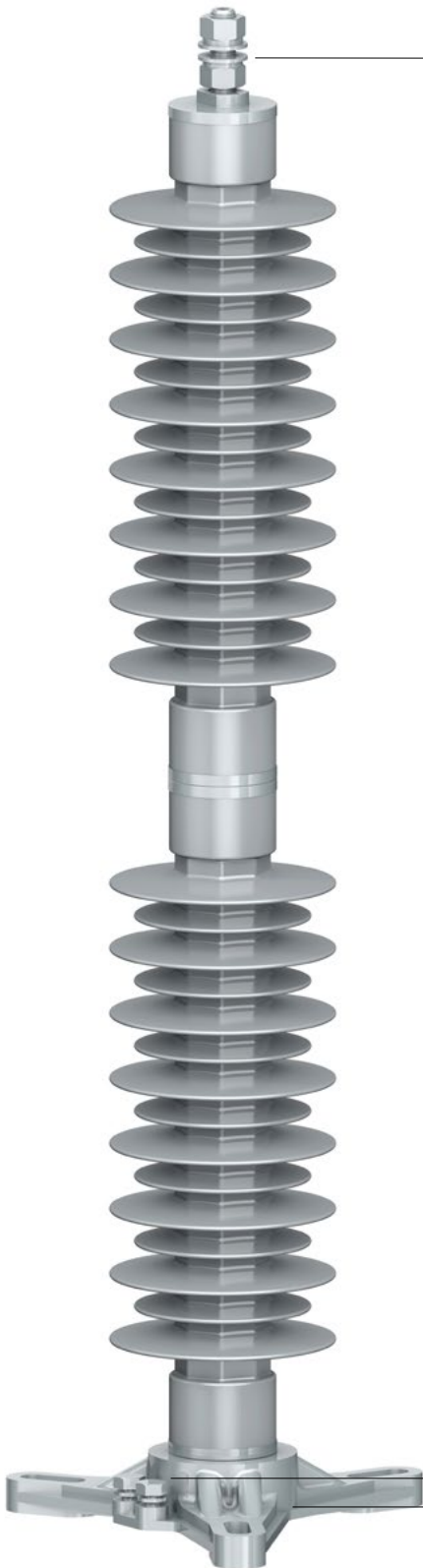
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Surge arresters with other characteristics are available on request

Mechanical Characteristics

TOV Capability (without prior energy)		Leakage distance	Overall height	Minimum distance between phase centers	Minimum distance between phase to ground	Cantilever load		Weight	Drawing Reference M7	Product code
1 sec* Tc	10 sec* Tc					Maximum design cantilever load lbf.in	Ultimate strength lbf.in			
kV	kV									
		in	in	in	in			lbs		
157	150	205	60.8	71.2	43.3	5310	8851	56.1	BOW-33-040	PBA31-138
164	157	205	60.8	71.2	43.3	5310	8851	56.1	BOW-33-040	PBA31-144
171	164	205	60.8	71.2	43.3	5310	8851	56.1	BOW-33-040	PBA31-150
159	150	223	81.9	71.3	43.3	17701	21227	84.9	BOW-28-130	PCA31E-138
166	157	223	81.9	71.3	43.3	17701	21227	84.9	BOW-28-130	PCA31E-144
173	164	223	81.9	71.3	43.3	17701	21227	84.9	BOW-28-130	PCA31E-150
207	196	266	88.8	79.1	51.2	17701	21227	121	BOW-28-130	PCA33E-180
221	209	266	88.8	79.1	51.2	17701	21227	121	BOW-28-130	PCA33E-192
221	209	266	88.8	79.1	59.0	17701	21227	121	BOW-28-130	PCA33E-198
248	235	266	88.8	95.0	59.0	17701	21227	121	BOW-28-130	PCA33E-216
299	284	398	110	114	66.9	17701	21227	146	BOW-28-131	PCA331E-258
303	288	398	110	122	74.8	17701	21227	146	BOW-28-131	PCA331E-264
313	299	398	110	122	74.8	17701	21227	146	BOW-28-131	PCA331E-276
329	313	443	118	122	74.8	17701	21227	146	BOW-28-131	PCA332E-288
343	326	532	137	161	82.7	17701	21227	182	BOW-28-131	PCA333E-300
350	333	532	137	161	82.7	17701	21227	182	BOW-28-131	PCA333E-312

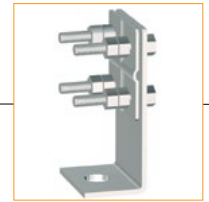
PAA Termination Options



L1
M16 stud assembly



L2
Line Clamp to suit
cables up to 0.62 in
approximately
50 kcmil



L5
Line Clamp to suit
cables up to 1.38 in
approximately
1250 kcmil



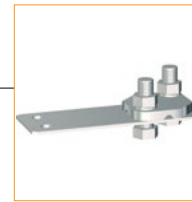
L6
Aluminum Stem
Ø30 x 3.15 in. high



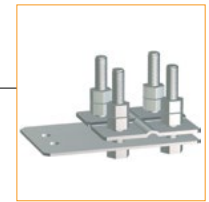
L21
4 Hole NEMA Pad



E1
2 x M10 x 0.79in
Hexagonal headed
set screws and
spring washers



E2
Grounding Clamp
to suit cables up
to .62 in.



E5
Grounding Clamp
to suit cables from
0.63 in. to 1.39 in.

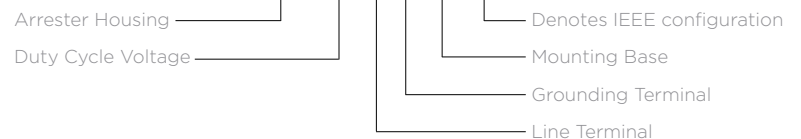


M7
Pedestal Base with
3 x .59 in. slots on
8 in. - 10 in. PCD

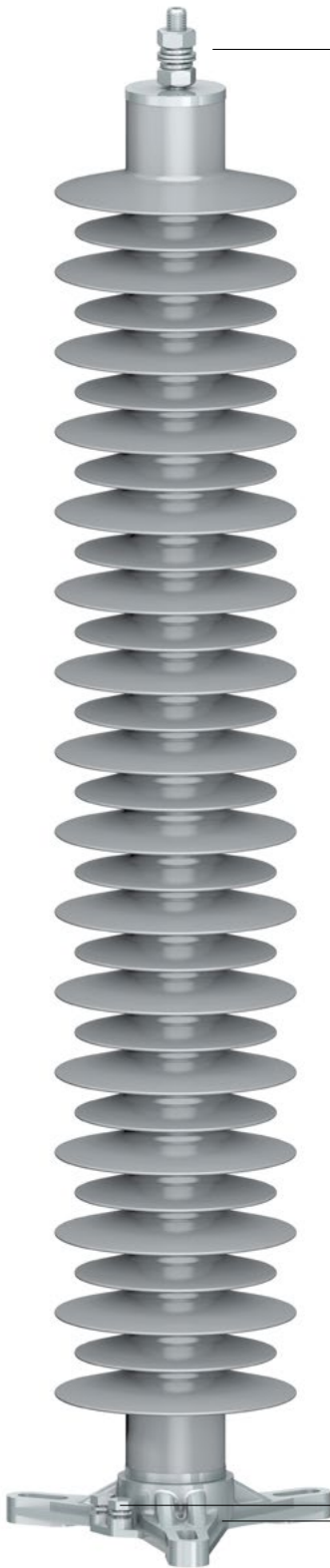


M8
Set of 3 3.5 x 3 in.
Polyfiber Base
Insulators supplied
with M5 pedestal
base with 3 x 0.59
in. slots on 8 in. - 10
in. PCD

Example: PAA22 60 L1 E1 M7-45



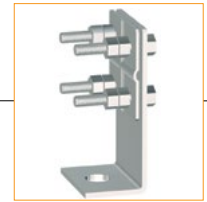
PBA Termination Options



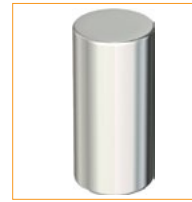
L1
M16 stud assembly



L2
Line Clamp to suit
cables up to 0.62 in
approximately
50 kcmil



L5
Line Clamp to suit
cables up to 1.38 in
approximately
1250 kcmil



L6
Aluminum Stem
Ø30 x 3.15 in. high



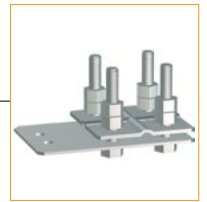
L21
4 Hole NEMA Pad



E1
2 x M10 x 0.79in
Hexagonal headed
set screws and
spring washers



E2
Grounding Clamp to
suit cables up to .62 in.



E5
Grounding Clamp
to suit cables from
0.63 in. to 1.39 in.



M7
Pedestal Base with
3 x .59 in. slots on
8 in. - 10 in. PCD



M8
Set of 3 3.5 x 3 in.
Polyfiber Base
Insulators supplied
with M5 pedestal
base with 3 x 0.59
in. slots on 8 in. - 10
in. PCD

Example: PAA22 60 L1 E1 M7-45

Arrester Housing

Duty Cycle Voltage

Denotes IEEE configuration

Mounting Base

Grounding Terminal

Line Terminal

PCA Termination Options



L1
M16 stud assembly



L2
Line Clamp to suit
cables up to 0.62 in
approximately
50 kcmil



L5
Line Clamp to suit
cables up to 1.38 in
approximately
1250 kcmil



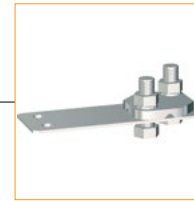
L6
Aluminum Stem
Ø30 x 3.15 in. high



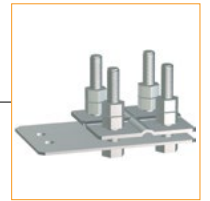
L21
4 Hole NEMA Pad



E1
2 x M10 x 0.79in
Hexagonal headed
set screws and
spring washers



E2
Grounding Clamp to
suit cables up to .62 in.



E5
Grounding Clamp
to suit cables from
0.63 in. to 1.39 in.

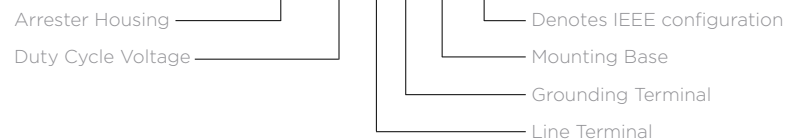


M7
Pedestal Base with
3 x .59 in. slots on
8 in. - 10 in. PCD



M8
Set of 3 3.5 x 3 in.
Polyfiber Base
Insulators supplied
with M5 pedestal
base with 3 x 0.59
in. slots on 8 in. - 10
in. PCD

Example: PAA22 60 L1 E1 M7-45



Surge Counter Options



SC12



SC13

The TE Connectivity range of surge counters and monitoring instruments are fully tested for use with any manufacturer's ZnO surge arrester.

- The surge counters are designed for installation in the ground connections of a single phase surge arrester.
- Fully weatherproofed and sealed for life, housed in a one piece gravity die cast aluminum case and epoxy power coated to enhance their already high degree of resistance to surface corrosion.
- The glass viewing window (SC12 and SC13) is sealed in place using a silicon rubber adhesive, and a desiccator is enclosed to ensure any residual moisture trapped during sealing is absorbed for the service life of the counter.
- Mounting is effected by means of an integrally cast lug at the rear of the case, providing a single clearance hole for the galvanized steel M12 bolt supplied.
- Fully tested for use with any manufacturer's ZnO surge arrester.

Available options:

SC12

The SC12 gives a visual indication of the quantity of surges the arrester has received via an integrated 6 digit cyclometer.

The SC12 can be supplied with an auxiliary volt free contact rated at 1 A - 250 V for connection to remote signalling equipment.

SC13

The SC13 provides additional measurement of total leakage current. The analog instrument provides a means of monitoring the leakage current through the surge arrester and over the surface of the surge arrester housing. Significant changes after installation may indicate deterioration in the surge arrester or a build up of surface contamination.

The SC13 can be supplied with an auxiliary volt free contact rated at 1 A - 250 V for connection to remote signalling equipment.

Arrester Ranges Available



Porcelain surge arresters

Porcelain surge arresters

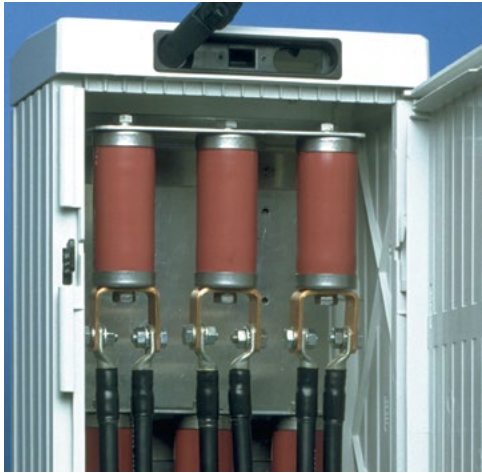
- For system voltages up to 800 kV
- Standard: IEC60099-4.
- Line Discharge Class: 2, 3, 4, 5
- High Current short circuit up to 65 kA



Transmission line arresters

Transmission line surge arresters

- For system voltages up to 500 kV
- Standard: IEC60099-4 and IEEE C62.11
- Line Discharge Class: 2, 3 (IEC) , Intermediate or Station (IEEE)
- Short Circuit rating up to 65 kA
- Fast acting disconnect - DD5-130



Cable sheath arresters

Cable sheath surge arresters

- For cable sheath protection up to 10 kV rating
- Standard: IEC60099-4
- Line discharge: class 1

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