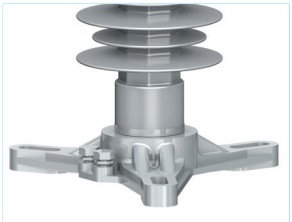
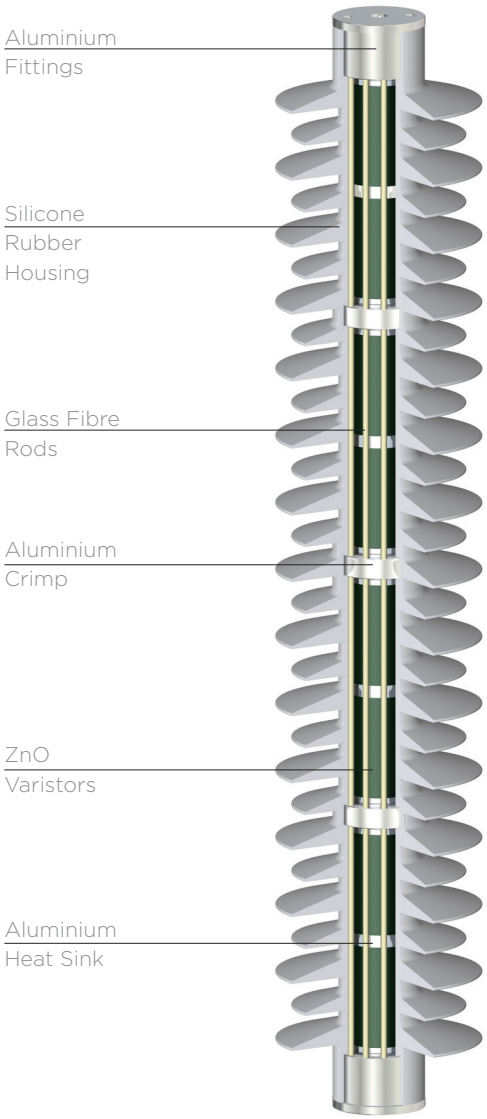


BOWTHORPE EMP

High Voltage
Polymeric Surge Arrester (IEC)

GENERIC TECHNICAL DATA

		PAA	PBA	PCA
Maximum system voltage U_m	kV	170	245	420
System voltage U_s	kV	150	220	400
Nominal discharge current	kA	10	10	10
High current impulse (4/10 µs)	kA	100	100	100
Arrester class designation		SL	SL	SM
Repetitive charge transfer rating Q_{rs}	C	1.4	1.6	2.2
Rated thermal energy W_{th} at U_r	kJ/kV	4.5	6.7	7.8
Rated short circuit current	kA	40	65	65
Cantilever load				
Specified long-term load (SLL)	kNm	0.25 / 0.50	0.6	2.0
Specified short-term load (SSL)	kNm	0.35 / 0.60	1.0	2.5



Qualification testing:

Decades of design and development experience have been used to produce today's TE Connectivity HV surge arresters. The construction comprises of a number of ZnO elements, assembled within a open cage construction, which has a silicone rubber moulded shed profile chemically bonded to the surface of the core.

TE Connectivity HV surge arresters are designed and manufactured to the current IEC60099-4: 2014 standard and the following tests have been successfully performed.

• Test performed on metal oxide blocks:

- IEC clause 10.8.3 – Residual Voltage Test
- IEC Clause 10.8.4 – Long Term Stability Test
- IEC Clause 10.8.5 – Charge Transfer Test*
- IEC Clause 10.8.7 – Operating Duty test
- IEC Clause 10.8.8 – TOV Test
- IEC Clause 10.8.15 – Dielectric strength of internal components

• Test performed on complete surge arresters:

- IEC Clause 10.8.6 – Cooling Test
- IEC Clause 10.8.10 – Short Circuit Tests
- IEC Clause 10.8.11 – Bending Moment Tests
- IEC Clause 10.8.14 – RIV Tests
- IEC Clause 10.8.17 – Weather Ageing Tests

• Insulation withstand tests on surge arrester housing:

- IEC Clause 10.8.2 – Insulation tests include

- Dry lightning impulse
- Wet power frequency
- Wet switching impulse

*New test introduced in the IEC60099-4: 2014 standard.

ELECTRICAL PERFORMANCE

Maximum system voltage U_m (kV)	Rated voltage U_r (kV)	Arrester designation class	Long duration current (2000 µs) (A)	Nominal discharge current (8/20 µs) (kA)	Rated short circuit current (kA)	Rated thermal energy capability (W_{th}) (kJ/kV)	Arrester type
12	9 - 15	SL	500	10	40	4.5	PAA
		SL	680	10	65	6.7	PBA
		SM	910	10	65	7.8	PCA
24	18 - 30	SL	500	10	40	4.5	PAA
		SL	680	10	65	6.7	PBA
		SM	910	10	65	7.8	PCA
36	27 - 42	SL	500	10	40	4.5	PAA
		SL	680	10	65	6.7	PBA
		SM	910	10	65	7.8	PCA
52	42 - 54	SL	500	10	40	4.5	PAA
		SL	680	10	65	6.7	PBA
		SM	910	10	65	7.8	PCA
72.5	54 - 75	SL	500	10	40	4.5	PAA
		SL	680	10	65	6.7	PBA
		SM	910	10	65	7.8	PCA
123	90 - 120	SL	500	10	40	4.5	PAA
		SL	680	10	65	6.7	PBA
		SM	910	10	65	7.8	PCA
145	108 - 150	SL	500	10	40	4.5	PAA
		SL	680	10	65	6.7	PBA
		SM	910	10	65	7.8	PCA
170	132 - 174	SL	500	10	40	4.5	PAA
		SL	680	10	65	6.7	PBA
		SM	910	10	65	7.8	PCA
245	180 - 240	SL	680	10	65	6.7	PBA
		SM	910	10	65	7.8	PCA
300	228 - 288	SM	910	10	65	7.8	PCA
420	312 - 372	SM	910	10	65	7.8	PCA

ELECTRICAL CHARACTERISTICS

Maximum System Voltage U_m	Rated Voltage U_r	Continuous Operating Voltage U_c	Max. Ures tested with current wave								Steep Lightning Current Impulse (1/20 µs)
			Switching Current Impulse (30/60 µs)				Lightning Current Impulse (8/20 µs)				
			250 A	500 A	1000 A	2000 A	5 kA	10 kA	15 kA	20 kA	10 kA
kV	kV	kV	kV	kV	kV	kV	kV	kV	kV	kV	kV
12	9	7.2	20.1	20.8	21.5		24.4	26.3	27.7	28.9	29.3
	12	9.6	24.8	25.6	26.5		30.1	32.4	34.1	35.6	36.1
	15	12.0	30.4	31.4	32.6		37.0	39.8	41.9	43.8	44.3
	9/10	7.2	23.5	24.2	25.0	26.1	28.2	30.0	31.8	33.0	31.5
	12	9.6	23.7	24.4	25.2	26.4	28.5	30.3	32.1	33.3	31.8
	15	12.0	35.2	36.2	37.4	39.2	42.3	45.0	47.7	49.5	47.3
	9/10	7.2	22.8	23.4	24.2	25.1	27.1	28.5	29.9	30.8	29.9
	12	9.6	23.0	23.6	24.5	25.4	27.4	28.8	30.2	31.1	30.2
	15	12.0	34.2	35.0	36.3	37.7	40.6	42.7	44.8	46.1	44.8
24	18	14.4	37.2	38.3	39.8		45.1	48.6	51.2	53.5	54.1
	21	16.8	42.8	44.2	45.9		52.0	56.0	59.0	61.6	62.3
	24	19.2	49.6	51.1	53.1		60.2	64.8	68.2	71.3	72.1
	27	21.6	55.2	57.0	59.1		67.1	72.2	76.0	79.4	80.4
	30	24.0	59.9	61.8	64.1		72.7	78.3	82.4	86.1	87.1
	18	14.4	35.5	36.6	37.8	39.6	42.7	45.5	48.2	50.0	47.7
	21	16.8	46.9	48.3	49.9	52.3	56.4	60.0	63.6	66.0	63.0
	24	19.2	47.4	48.8	50.4	52.8	57.0	60.6	64.2	66.7	63.6
	27	21.6	57.9	59.6	61.6	64.5	69.6	74.0	78.4	81.4	77.7
	30	24.0	59.2	61.0	63.0	66.0	71.2	75.8	80.3	83.3	79.5
	18	14.4	34.6	35.4	36.7	38.1	41.0	43.2	45.4	46.7	45.4
	21	16.8	45.6	46.7	48.5	50.3	54.2	57.0	59.9	61.6	59.9
	24	19.2	46.1	47.2	49.0	50.8	54.7	57.6	60.5	62.2	60.5
	27	21.6	57.4	58.9	61.0	63.3	68.2	71.8	75.4	77.5	75.4
	30	24.0	57.6	59.0	61.2	63.5	68.4	72.0	75.6	77.8	75.6
36	30	24.0	59.9	61.8	64.1		72.7	78.3	82.4	86.1	87.1
	36	28.8	72.3	74.6	77.4		87.8	94.5	100	104	105
	42	33.6	84.7	87.3	90.7		103	111	117	122	123
	45	36.0	89.8	92.6	96.2		109	117	124	129	131
	54	43.2	109	113	117		133	143	151	157	159
	30	24.0	59.2	61.0	63.0	66.0	71.2	75.8	80.3	83.3	79.5
	36	28.8	71.1	73.2	75.6	79.2	85.4	90.9	96.4	100	95.4
	42	33.6	82.9	85.4	88.2	92.4	100	106	112	117	111
	45	36.0	93.8	96.6	99.8	105	113	120	127	132	126
	54	43.2	107	110	113	119	128	136	145	150	143
	30	24.0	57.6	59.0	61.2	63.5	68.4	72.0	75.6	77.8	75.6
	36	28.8	69.1	70.8	73.4	76.2	82.1	86.4	90.7	93.3	90.7
	42	33.6	80.6	82.7	85.7	88.9	95.8	101	106	109	106
	45	36.0	92.0	94.3	97.8	101	109	115	121	124	121
	54	43.2	104	106	110	114	123	130	130	140	136

Surge arresters with other characteristics are available on request

MECHANICAL CHARACTERISTICS

TOV Capability (with W_{th} prior energy)		Creepage length	Overall height	Minimum distance between phase centres	Minimum distance between phase to earth	Cantilever load		Weight	Drawing Reference	Product code
1 sec* T_r	10 sec* T_r					Specified short-term load (SSL)	Specified long-term load (SLL)			
kV	kV	mm	mm	mm	mm	kNm	kNm	kg	M7	
9.72	9.36	970	335	320	60	0.35	0.25	5.0	BOW-34-079	PAA1-9
12.9	12.5	970	335	320	60	0.35	0.25	5.0	BOW-34-079	PAA1-12
16.2	15.6	970	335	320	60	0.35	0.25	5.0	BOW-34-079	PAA1-15
10.3	9.8	1340	449	320	60	1.0	0.6	7.0	BOW-33-050	PBA1-9
13.7	13.1	1340	449	320	60	1.0	0.6	7.0	BOW-33-050	PBA1-12
17.1	16.4	1340	449	320	90	1.0	0.6	7.0	BOW-33-050	PBA1-15
10.4	12.2	1100	400	320	60	2.5	2.0	10.0	BOW-28-190	PCA1-9
13.8	13.1	1100	400	320	60	2.5	2.0	10.0	BOW-28-190	PCA1-12
17.3	16.4	1100	400	320	90	2.5	2.0	10.0	BOW-28-190	PCA1-15
19.4	18.7	970	335	320	90	0.35	0.25	5.0	BOW-34-079	PAA1-18
22.7	21.8	970	335	320	90	0.35	0.25	5.0	BOW-34-079	PAA1-21
25.9	25.0	970	335	320	120	0.35	0.25	5.0	BOW-34-080	PAA1-24
29.2	28.1	1125	375	320	120	0.35	0.25	5.5	BOW-34-080	PAA2-27
32.4	31.2	1125	375	320	160	0.35	0.25	5.5	BOW-34-080	PAA2-30
20.5	19.6	1340	449	320	90	1.0	0.6	7.0	BOW-33-050	PBA1-18
23.9	22.9	1340	449	320	160	1.0	0.6	7.0	BOW-33-050	PBA1-21
27.4	26.2	1340	449	320	160	1.0	0.6	7.0	BOW-33-050	PBA1-24
30.8	29.4	1340	449	320	220	1.0	0.6	7.0	BOW-33-050	PBA1-27
34.2	32.7	1340	449	320	220	1.0	0.6	7.0	BOW-33-050	PBA1-30
20.7	19.6	1100	400	320	90	2.5	2.0	10.0	BOW-28-190	PCA1-18
24.2	22.9	1100	400	320	120	2.5	2.0	10.0	BOW-28-190	PCA1-21
27.6	26.2	1100	400	320	120	2.5	2.0	10.0	BOW-28-190	PCA1-24
31.1	29.4	1100	400	320	160	2.5	2.0	10.0	BOW-28-190	PCA1-27
34.5	32.7	1100	400	320	160	2.5	2.0	10.0	BOW-28-190	PCA1-30
32.4	31.2	1125	375	320	160	0.35	0.25	5.5	BOW-34-080	PAA2-30
38.9	37.4	1125	375	320	160	0.35	0.25	5.5	BOW-34-080	PAA2-36
45.4	43.7	1125	375	320	220	0.35	0.25	5.5	BOW-34-080	PAA2-42
48.6	46.8	1125	375	320	220	0.35	0.25	5.5	BOW-34-080	PAA2-45
58.3	56.1	2250	608	389	270	0.35	0.25	8.5	BOW-34-081	PAA4-54
34.2	32.7	1340	449	320	220	1.0	0.6	7.0	BOW-33-050	PBA1-30
41.0	39.2	1340	449	348	220	1.0	0.6	7.0	BOW-33-050	PBA1-36
47.9	45.8	1340	449	398	270	1.0	0.6	7.0	BOW-33-050	PBA1-42
51.3	49.1	1948	604	398	320	1.0	0.6	10.0	BOW-33-051	PBA2-45
61.2	58.9	1948	604	558	480	1.0	0.6	10.0	BOW-33-051	PBA2-54
34.5	32.7	1100	400	320	160	2.5	2.0	10.0	BOW-28-190	PCA1-30
41.4	39.2	1100	400	360	220	2.5	2.0	10.0	BOW-28-190	PCA1-36
48.3	45.8	1100	400	410	220	2.5	2.0	10.0	BOW-28-190	PCA1-42
51.8	49.1	2250	590	410	320	2.5	2.0	15.0	BOW-28-191	PCA2E-45
62.1	58.9	2250	320	410	320	2.5	2.0	15.0	BOW-28-191	PCA2E-54

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

ELECTRICAL CHARACTERISTICS

Maximum System Voltage U_m	Rated Voltage U_r	Continuous Operating Voltage U_c	Max. Ures tested with current wave								Steep Lightning Current Impulse (1/20 µs)
			Switching Current Impulse (30/60 µs)				Lightning Current Impulse (8/20 µs)				
			250 A	500 A	1000 A	2000 A	5 kA	10 kA	15 kA	20 kA	10 kA
kV	kV	kV	kV	kV	kV	kA	kV	kV	kV	kV	kV
52	42	33.6	84.7	87.3	90.7		103	111	117	122	123
	45	36.0	89.8	92.6	96.2		109	117	124	129	131
	48	38.4	97.1	100	104		118	127	134	140	141
	54	43.2	109	113	117		133	143	151	157	159
	42	33.6	82.9	85.4	88.2	92.4	99.7	106	112	117	111
	45	36.0	93.8	96.6	100	105	113	120	127	132	126
	48	38.4	94.8	97.6	101	106	114	121	128	133	127
	54	43.2	107	110	113	119	128	136	145	150	143
	42	33.6	80.6	82.7	85.7	88.9	95.8	101	106	109	106
	45	36.0	92.0	94.3	97.8	101	109	115	121	124	121
	48	38.4	92.2	94.5	97.9	102	109	115	121	124	121
	54	43.2	104	106	110	114	123	130	136	140	136
72.5	60	48.0	119	123	128		145	156	164	171	174
	72	57.6	144	149	154		175	188	198	207	210
	75	60.0	149	153	159		181	194	205	214	216
	60	48.0	118	122	126	132	142	152	161	187	159
	72	57.6	142	146	151	158	171	182	193	200	191
	75	60.0	154	159	164	172	185	197	209	219	207
	60	48.0	115	118	122	127	137	144	151	156	151
	72	57.6	138	142	147	152	164	173	181	187	181
	75	60.0	150	153	159	165	178	187	196	202	196
123	96	76.8	192	198	205		233	250	264	275	279
	108	86.4	223	230	239		271	292	307	321	325
	96	76.8	190	195	202	211	228	242	257	267	255
	108	86.4	213	220	227	238	256	273	289	300	286
	120	96.0	237	244	252	264	285	303	321	333	318
	96	76.8	184	189	196	203	219	230	242	249	242
	108	86.4	207	213	220	229	246	259	272	280	272
	120	96.0	230	236	245	254	274	288	302	311	302
145	108	86.4	223	230	239		271	292	307	321	325
	120	96.0	239	246	255		290	312	328	343	347
	132	106	263	272	282		320	344	362	379	383
	108	86.4	213	220	227	238	256	273	289	300	286
	120	96.0	237	244	252	264	285	303	321	333	318
	132	106	261	268	277	290	313	333	353	367	350
	108	86.4	207	213	220	229	246	259	272	280	272
	120	96.0	230	236	245	254	274	288	302	311	302
	132	106	253	260	269	279	301	317	333	342	333

Surge arresters with other characteristics are available on request

MECHANICAL CHARACTERISTICS

TOV Capability (with W_{th} prior energy)		Creepage length	Overall height	Minimum distance between phase centres	Minimum distance between phase to earth	Cantilever load		Weight	Drawing Reference	Product code
1 sec* T_r	10 sec* T_r					Specified short-term load (SSL)	Specified long-term load (SLL)			
kV	kV	mm	mm	mm	mm	kNm	kNm	kg	M7	
47.4	45.6	2250	608	320	220	0.60	0.50	8.5	BOW-34-081	PAA4-42
50.8	48.8	2250	608	320	220	0.60	0.50	8.5	BOW-34-081	PAA4-45
54.1	52.1	2250	608	320	220	0.60	0.50	8.5	BOW-34-081	PAA4-48
60.9	58.6	2250	608	339	270	0.60	0.50	8.5	BOW-34-081	PAA4-54
47.9	45.8	1340	449	348	270	1.0	0.6	7.0	BOW-33-050	PBA1-42
51.3	49.1	1948	604	398	320	1.0	0.6	10.0	BOW-33-051	PBA2-45
54.7	52.3	1948	604	398	320	1.0	0.6	10.0	BOW-33-051	PBA2-48
61.6	58.9	1948	604	558	480	1.0	0.6	10.0	BOW-33-051	PBA2-54
48.3	45.8	1100	400	360	270	2.5	2.0	10.0	BOW-28-190	PCA1-42
51.8	49.1	2250	590	410	320	2.5	2.0	15.0	BOW-28-191	PCA2E-45
55.2	52.3	2250	590	410	320	2.5	2.0	15.0	BOW-28-191	PCA2E-48
62.1	58.9	2250	590	410	320	2.5	2.0	15.0	BOW-28-191	PCA2E-54
64.8	62.4	2250	608	389	320	0.60	0.50	8.5	BOW-34-081	PAA4-60
77.8	74.9	2250	608	549	480	0.60	0.50	8.5	BOW-34-081	PAA4-72
81.0	78.0	2250	608	549	480	0.60	0.50	8.5	BOW-34-081	PAA4-75
68.4	65.4	1948	604	558	480	1.0	0.6	10.0	BOW-33-051	PBA2-60
82.1	78.5	3872	1096	708	480	1.0	0.6	18.5	BOW-33-052	PBA3-72
85.5	81.8	3872	1096	708	630	1.0	0.6	18.5	BOW-33-052	PBA3-75
69.0	65.4	2250	590	570	480	2.5	2.0	15.0	BOW-28-191	PCA2E-60
82.8	78.5	4500	1085	570	480	2.5	2.0	27.5	BOW-28-192	PCA3E-72
86.3	81.8	4500	1085	720	480	2.5	2.0	27.5	BOW-28-192	PCA3E-75
104	99.8	4500	1216	549	480	0.60	0.50	18.0	BOW-34-082	PAA44-96
117	112	4500	1216	699	630	0.60	0.50	18.0	BOW-34-082	PAA44-108
109	105	3872	1096	978	630	1.0	0.6	18.5	BOW-33-052	PBA3-96
123	118	3872	1096	978	900	1.0	0.6	18.5	BOW-33-052	PBA3-108
137	131	3872	1096	978	900	1.0	0.6	18.5	BOW-33-052	PBA3-120
110	105	4500	1085	720	630	2.5	2.0	27.5	BOW-28-192	PCA3E-96
124	118	4500	1085	990	900	2.5	2.0	27.5	BOW-28-192	PCA3E-108
138	131	4500	1085	990	900	2.5	2.0	27.5	BOW-28-192	PCA3E-120
117	112	4500	1216	699	630	0.60	0.50	18.0	BOW-34-082	PAA44-108
130	125	4500	1216	699	630	0.60	0.50	18.0	BOW-34-082	PAA44-120
143	137	4500	1216	969	900	0.60	0.50	18.0	BOW-34-082	PAA44-132
123	118	3872	1096	978	900	1.0	0.6	18.5	BOW-33-052	PBA3-108
137	131	3872	1096	978	900	1.0	0.6	18.5	BOW-33-052	PBA3-120
150	144	5212	1685	1178	900	1.0	0.6	26.5	BOW-33-053	PBA31-132
124	118	4500	1085	990	900	2.5	2.0	27.5	BOW-28-192	PCA3E-108
138	131	4500	1085	990	900	2.5	2.0	27.5	BOW-28-192	PCA3E-120
152	144	4500	1085	990	900	2.5	2.0	27.5	BOW-28-192	PCA3E-132

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

ELECTRICAL CHARACTERISTICS

Maximum System Voltage U_m	Rated voltage U_r	Continuous operating voltage U_c	Max. Ures tested with current wave								Steep lightning current impulse (1/20 µs)
			Switching current impulse (30/60 µs)				Lightning current impulse (8/20 µs)				
			250 A	500 A	1000 A	2000 A	5 kA	10 kA	15 kA	20 kA	10 kA
kV	kV	kV	kV	kV	kV	kV	kV	kV	kV	kV	kV
170	138	110	276	284	295		335	360	380	396	401
	144	115	288	297	308		350	377	397	414	419
	150	120	297	307	318		361	389	409	428	433
	138	110	272	281	290	303	328	348	369	383	366
	144	115	284	293	303	317	342	364	385	400	382
	150	120	296	305	315	330	356	379	401	417	398
	138	110	265	272	282	292	315	331	348	358	348
	144	115	276	283	294	305	328	346	363	373	363
	150	120	288	295	306	318	342	360	378	389	378
245	180	144	346	354	367	381	410	432	454	467	454
	192	154	369	378	392	406	438	461	484	498	484
	198	158	380	390	404	419	451	475	499	513	499
	216	173	415	425	441	457	492	518	544	560	544
300	252	202	484	496	514	533	575	605	635	653	635
	258	206	495	508	526	446	588	619	650	669	650
	264	211	507	520	539	559	602	634	665	684	665
	276	221	530	543	563	584	629	662	696	715	696
	288	230	553	567	588	610	657	691	726	746	726
	300	240	576	590	612	635	684	720	756	778	756
	312	250	599	614	636	660	711	749	786	809	786
420	312	250	599	614	636	660	711	749	786	809	786
	330	264	634	649	673	699	752	792	832	855	832
	336	269	645	661	685	711	766	806	847	871	832
	342	274	657	673	698	724	780	821	862	886	862
	360	288	691	708	734	762	821	864	907	933	907
	372	298	714	732	759	787	848	893	937	964	937

Surge arresters with other characteristics are available on request

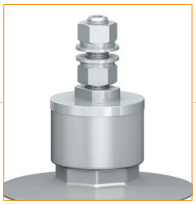
MECHANICAL CHARACTERISTICS

TOV Capability (with W_{th} prior energy)		Creepage length	Overall height	Minimum distance between phase centres	Minimum distance between phase to earth	Cantilever load		Weight	Drawing Reference	Product code
1 sec* T_r	10 sec* T_r					Specified short-term load (SSL)	Specified long-term load (SLL)			
kV	kV	mm	mm	mm	mm	kNm	kNm	kg	M7	
156	150	4500	1216	969	900	0.60	0.50	18.0	BOW-34-082	PAA44-138
162	156	4500	1216	969	900	0.60	0.50	18.0	BOW-34-082	PAA44-144
169	163	4500	1216	969	900	0.60	0.50	18.0	BOW-34-082	PAA44-150
157	150	5212	1685	1178	1100	1.0	0.6	26.5	BOW-33-053	PBA31-138
164	157	5212	1685	1178	1100	1.0	0.6	26.5	BOW-33-053	PBA31-144
171	164	5212	1685	1810	1100	1.0	0.6	26.5	BOW-33-053	PBA31-150
159	150	5600	1571	1810	900	2.5	2.0	38.5	BOW-28-193	PCA31E-138
166	157	5600	1571	1810	900	2.5	2.0	38.5	BOW-28-193	PCA31E-144
173	164	5600	1571	1810	1100	2.5	2.0	38.5	BOW-28-193	PCA31E-150
207	196	9000	2256	2010	1300	2.5	2.0	56.0	BOW-28-193	PCA33E-180
221	209	9000	2256	2010	1300	2.5	2.0	56.0	BOW-28-193	PCA33E-192
228	216	9000	2256	2010	1300	2.5	2.0	56.0	BOW-28-193	PCA33E-198
248	235	9000	2256	2415	1500	2.5	2.0	56.0	BOW-28-193	PCA33E-216
290	275	10100	2796	2900	1700	2.5	2.0	67.0	BOW-28-194	PCA331E-252
297	281	10100	2796	2900	1700	2.5	2.0	67.0	BOW-28-194	PCA331E-258
304	288	10100	2796	3100	1700	2.5	2.0	67.0	BOW-28-194	PCA331E-264
317	301	10100	2796	3100	1900	2.5	2.0	67.0	BOW-28-194	PCA331E-276
331	314	11250	2986	4100	1900	2.5	2.0	71.0	BOW-28-194	PCA332E-288
345	327	13500	3481	4100	1900	2.5	2.0	83.5	BOW-28-194	PCA333E-300
359	340	13500	3481	5200	2100	2.5	2.0	83.5	BOW-28-194	PCA333E-312
359	340	13500	3481	5200	2100	2.5	2.0	83.5	BOW-28-194	PCA332E-312
380	360	13500	3481	5200	2100	2.5	2.0	83.5	BOW-28-194	PCA333E-330
386	366	13500	3481	5200	2100	2.5	2.0	83.5	BOW-28-194	PCA333E-336
393	373	13500	3481	5200	2350	2.5	2.0	83.5	BOW-28-194	PCA333E-342
414	392	13500	3481	5200	2350	2.5	2.0	83.5	BOW-28-194	PCA333E-360
428	405	13500	3481	5200	2350	2.5	2.0	83.5	BOW-28-194	PCA333E-372

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

PAA termination options

L0
M16 screw assembly

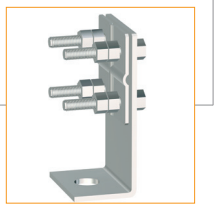


L1
M16 stud assembly

L2
Line Clamp to suit cables up to Ø16 mm

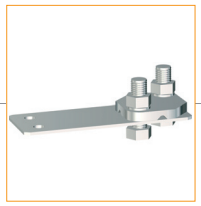
L6
Aluminium Stem
Ø30 x 80 mm high

L21
4 Hole NEMA Pad

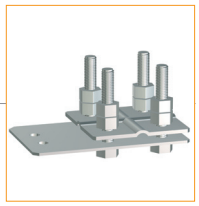


L5
Line Clamp to suit cables up to Ø35 mm

E1
2 x M10 x 20 mm hexagonal headed set screws and spring washers



E2
Earth Clamp to suit cables up to Ø16 mm



E5
Earth Clamp to suit cables from Ø 16 mm to Ø35 mm

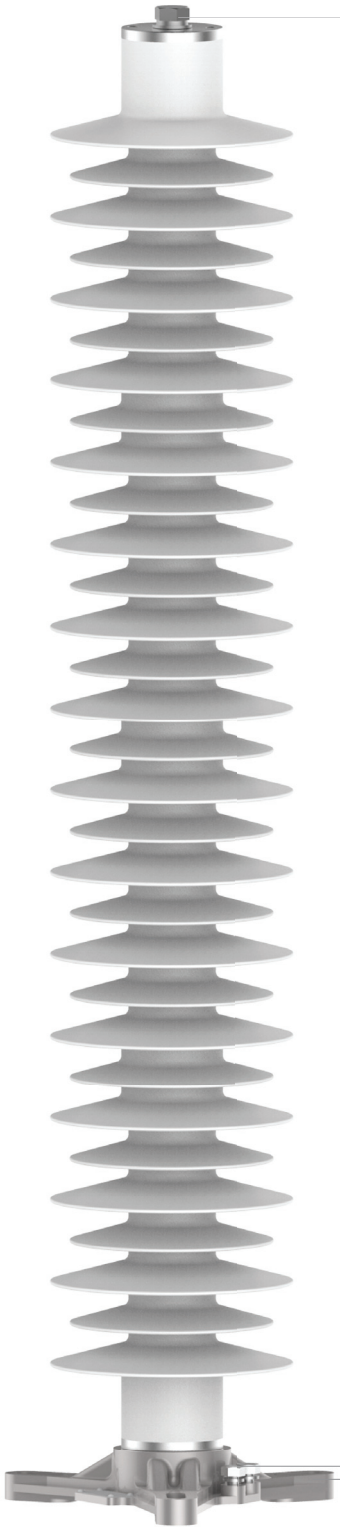
M7
Pedestal Base with 3 x 15 mm slots on 200 mm - 254 mm PCD

M8
Set of 3 Ø89 x 76 Polyfiber Base Insulators supplied with M7 pedestal base with 3 x 15 mm slots on 200 mm - 254 mm PCD

Example: PAA44 96 L0 E1 M7

- PAA44 — Arrester Housing
- 96 — Rated Voltage
- L0 — Line Terminal
- E1 — Earth Terminal
- M7 — Mounting Base

PBA termination options



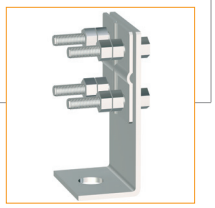
L0
M16 screw assembly

L1
M16 stud assembly

L2
Line Clamp to suit cables up to Ø16 mm

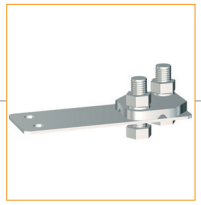
L6
Aluminium Stem
Ø30 x 80 mm high

L21
4 Hole NEMA Pad

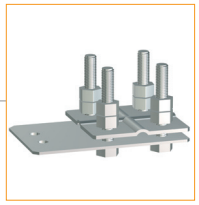


L5
Line Clamp to suit cables up to Ø35 mm

E1
2 x M10 x 20 mm hexagonal headed set screws and spring washers



E2
Earth Clamp to suit cables up to Ø16 mm



E5
Earth Clamp to suit cables from Ø 16 mm to Ø35 mm

M5
Pedestal base with 4 holes on 280mm PCD or 3 x 15mm slots on 200mm - 254mm PCD

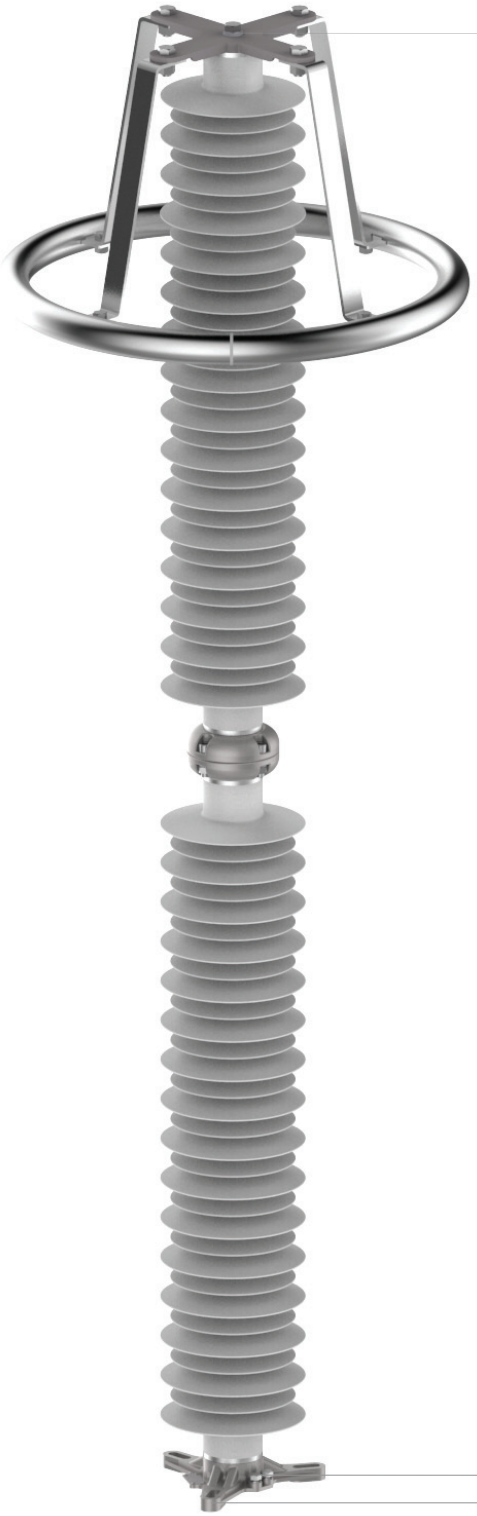
M7
Pedestal Base with 3 x 15 mm slots on 200 mm - 254 mm PCD

M8
Set of 3 Ø89 x 76 Polyfiber Base Insulators supplied with M7 pedestal base with 3 x 15 mm slots on 200 mm - 254 mm PCD

Example: PBA3 120 L0 E1 M7

- PBA3 — Arrester Housing
- 120 — Rated Voltage
- L0 — Line Terminal
- E1 — Earth Terminal
- M7 — Mounting Base

PCA termination options



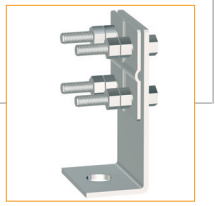
L0
M16 screw assembly

L1
M16 stud assembly

L2
Line Clamp to suit cables up to Ø16 mm

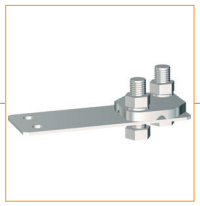
L6
Aluminium Stem
Ø30 x 80 mm high

L21
4 Hole NEMA Pad

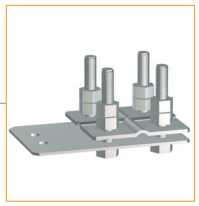


L5
Line Clamp to suit cables up to Ø35 mm

E1
2 x M10 x 20 mm hexagonal headed set screws and spring washers



E2
Earth Clamp to suit cables up to Ø16 mm



E5
Earth Clamp to suit cables from Ø 16 mm to Ø35 mm

M5
Pedestal base with 4 holes on 280mm PCD or 3 x 15mm slots on 200mm - 254mm PCD

M7
Pedestal Base with 3 x 15 mm slots on 200 mm - 254 mm PCD

M8
Set of 3 Ø89 x 76 Polyfiber Base Insulators supplied with M7 pedestal base with 3 x 15 mm slots on 200 mm - 254 mm PCD

Example: PCA33E 198 L0 E1 M7

- Arrester Housing
- Rated Voltage
- Line Terminal
- Earth Terminal
- Mounting Base

Surge Counter options

SC12

SC13

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

- The surge counters, are designed for installation in the earth connections of a single phase surge arrester.
- The SC12 can be installed to used on a 3-phase set of arresters
- Fully weatherproofed and sealed for life they are housed in a one piece gravity die cast aluminium case, epoxy powder coated to enhance its 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 desiccant 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.

Available options:

SC12

The SC12 gives a visual indication of the quantity of surges the arrester has received; this is 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 SC 13 provides the additional measurement of total leakage current. The analogue 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.

Other product ranges available

Porcelain surge arresters

Porcelain surge arresters

- For system voltages up to 800 kV
- Standard: IEC60099-4, 2014 and IEEE C62.11: 2012
- Designation class: SL, SM and SH
- High Current short circuit up to 65 kA
- Application: Transmission and sub-station overvoltage protection

Transmission line arresters

Transmission line surge arresters

- For system voltages up to 500 kV
- Standard: IEC60099-4, 2014 and IEEE C62.11:2012
- Designation class: SL, SM
- Short Circuit rating up to 65 kA
- Fast acting disconnect - DD5-130
- Application: Transmission line protection

Cable sheath arresters

Cable sheath surge arresters

- For cable sheath protection up to 10 kV rating
- Standard: IEC60099-4
- Designation class: DH
- Application: Cable sheath protection

Cable spiker kit

Cable spiker kit

- Safety device for cables
- Cable to BS6622 & BS EN/IEC60228
- Suitable for cable up to 102 mm diameter
- Hydraulic pump - no explosive cartridge required
- Application: To determine if 11 kV cable is dead or alive

Airfield lighting box

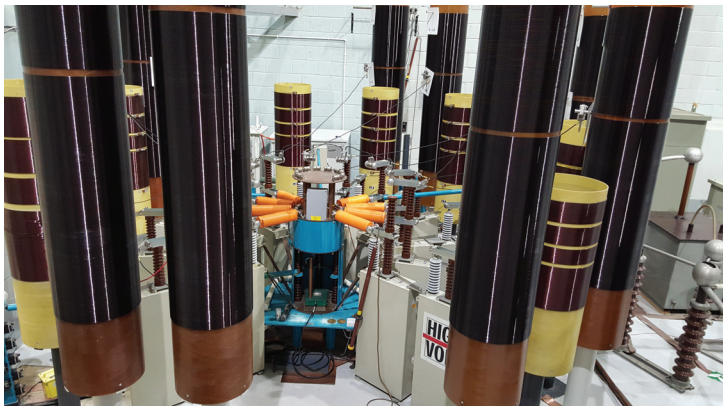
Airfield lighting box type 2DCAFL4

- Suitable for 4 kV DC lighting systems
- Standard: IEC60099-4, 2014
- Designation class: DH
- Robust design to IP65
- Application: Protection of airfield lighting

Brighton High Power Laboratory

MARX impulse generator 1.65 MV

500 kV power transformer with PD testing



High energy surge arrester test system

HV varistor block ageing test system with AC and DC supply

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