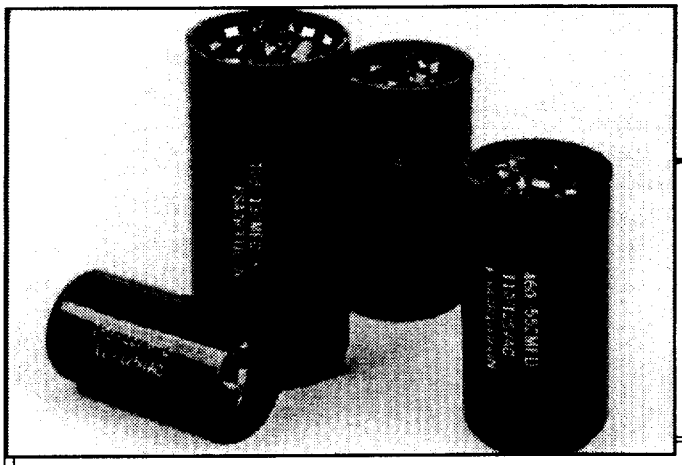

TYPE PS

AC Motor Start Capacitor

FEATURES:

- Operating Voltage: 110 VAC to 330 VAC
- Operating Temperatures: -40°C to +65°C
- Moisture & Oil Resistant Plastic Case
- Operating Frequency 50-60 Hz

Aerovox manufactures AC electrolytic motor starting capacitors to meet EIA RS463 Type I and Type II performance specifications. Type PS capacitors are designed to start single phase motors and can be applied in limited duty gear motor applications when properly derated.*

• QA STABILITY TEST

Capacitors shall be capable of withstanding a qualification test in a 65°C ±3°C ambient at rated sinusoidal voltage and frequency with current limiting and discharge resistors. A resistance equivalent to approximately 10% of the capacitor impedance shall be connected in series with each capacitor and a resistor of approximately 1,000 ohms shall be connected in parallel with each capacitor. Qualification test shall be conducted in a test chamber with capacitors separated by at least 1 inch of air and with sufficient circulation so that, the ambient temperature remains within the above temperature limits and does not vary more than ±1°C, also capacitors shall not be exposed to direct radiation from heating elements. Test voltage is applied to the capacitor resistor combination. Specific test conditions for Type I and Type II capacitors are given. At the conclusion of the qualification test, at room temperature, the capacitance shall not differ from the initial measured value by more than ±25% and the power factor shall not exceed 20%.

EIA Type I

Rated Voltage AC RMS	Capacitance Rating	Duty Cycle Secs. On	Duty Cycle Secs. Off	% Duty Cycle	Duration of Test (Number of Starts)
110	all	¾	29¼	2.5	75000
115	all	¾	29¼	2.5	75000
125	all	¾	29¼	2.5	75000
165	all	1	59	1.670	40000
220	all	1	59	1.670	40000
250	all	1	59	1.670	40000
330	all	1	59	1.670	40000

EIA TYPE II

Rated Voltage Test Voltage AC (rms)	Capacitance Rating (mfd) From	Capacitance Rating (mfd) To	Duty Cycle Secs. (on)	Duty Cycle Secs. (off)	% Duty Cycle	Duration of Test (No.of Starts)
110	21-25	124-149	¾	29¼	2.5	50,000
	130-156	243-292	1	59	1.670	50,000
	270-324	378-454	1	89	1.110	33,500
	400-480	540-648	1	119	0.833	25,000
	590-708	850-1020	1	179	0.556	16,500
	1000-1200	1280-1200	1	239	0.417	12,500
115	21-25	108-130	¾	29¼	2.5	50,000
	124-149	189-227	1	59	1.670	50,000
	216-259	340-408	1	89	1.110	33,500
	378-454	460-552	1	119	0.833	25,000
	540-648	815-978	1	179	0.556	16,500
	829-995	1020-1224	1	239	0.417	12,500
125	21-25	88-106	¾	29¼	2.5	50,000
	108-130	145-174	1	59	1.670	50,000
	161-193	233-280	1	89	1.110	33,500
	243-292	378-454	1	119	0.833	25,000
	400-480	590-708	1	179	0.556	16,500
	645-774	800-960	1	239	0.417	12,500
165	21-25	88-106	1	59	1.670	33,500
	108-130	124-149	1	89	1.110	33,500
	130-156	216-259	1	119	0.833	25,000
	233-280	340-408	1	179	0.556	16,500
	378-454	590-708	1	239	0.417	12,500
220	21-25	43-52	1	59	1.670	33,500
	130-156	72-86	1	89	1.110	33,500
	270-324	145-174	1	119	0.833	25,000
	400-480	243-292	1	179	0.556	16,500
	590-708	430-516	1	239	0.417	12,500
250	21-25	30-36	1	59	1.670	33,500
	36-43	64-77	1	89	1.110	33,500
	72-86	88-106	1	119	0.833	25,000
	108-130	189-227	1	179	0.556	16,500
	216-259	324-389	1	239	0.417	12,500
330	21-25	21-25	1	59	1.670	33,500
	25-30	30-36	1	89	1.110	33,500
	36-43	64-77	1	119	0.833	25,000
	72-86	88-106	1	179	0.556	16,500
	108-130	130-156	1	239	0.417	12,500

*** For Higher Performance Than EIA Type I Requirements, Contact AEROVOX Application Engineering: 508-994-9661**

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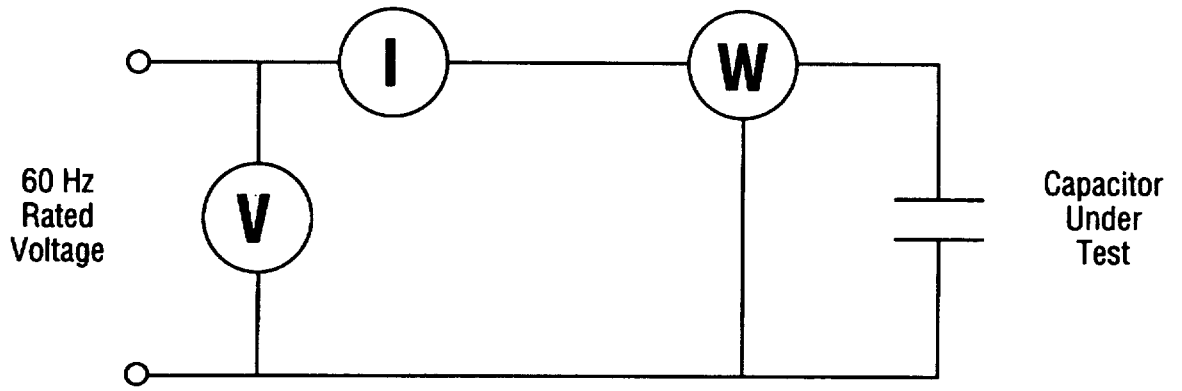
Procedure For Capacitance and Power Factor Measurement

The capacitance and power factor of AC motor start capacitors are calculated by applying 60Hz rated voltage to the capacitor and recording from the circuit below the voltage within 2 seconds, the current within 3 seconds, and the watts within 4 seconds.



Capacitance and power factor are calculated with the below equations:

$$C = \frac{I \times 10^6}{2\pi f V} \qquad PF = \frac{W \times 100}{VI}$$

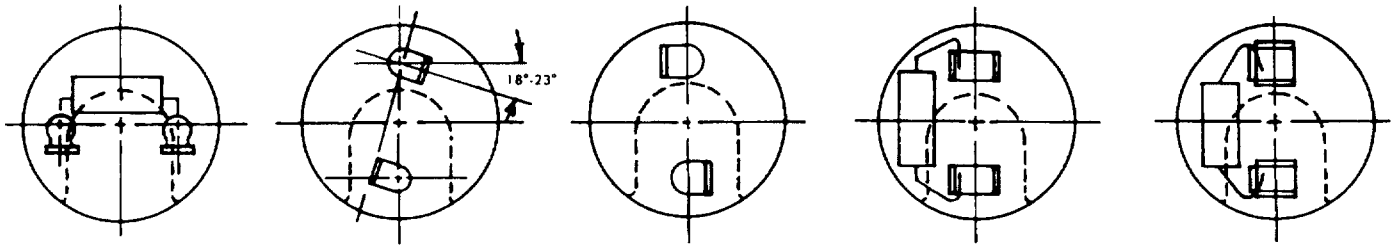
C = Capacitance in μF
I = Current in amperes
f = Frequency in Hertz

V = Volts rms
W = Power in watts
PF = % power factor

Because of the high watt-second value of AC motor capacitors, precaution should be taken during the measurement of capacitance and power factor in the event of violent capacitor failure.

Type PS

Outline Dimensions



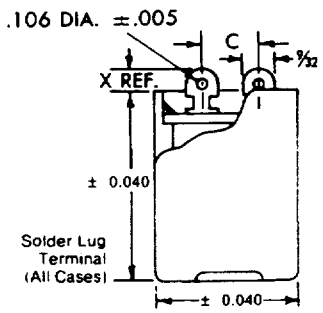
Solder Lug All Case Sizes

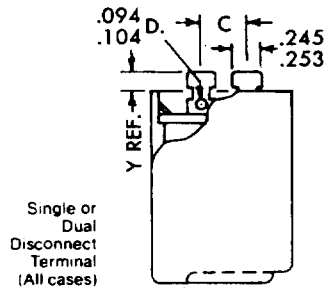
Single Disconnect Case 1-2-3

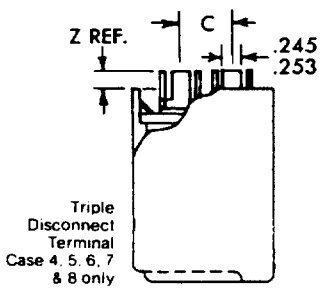
Single Disconnect Case 4-5-6-7-8

Dual Disconnect All Cases

Triple Disconnect Case 4-5-6-7-8







CASE DIA.	RECESS CASE		
	X	Y	Z
1 7/16	1/8	1/16	1/8
1 13/16	1/8	1/16	1/8
2 1/16	1/8	1/16	1/8
2 9/16	1/8	1/16	1/8

Part Number Information

Aerovox Catalog

PS A 1 R 10 161 N

Aerovox Type Number
This identifies the basic capacitor design.

Performance
A = EIA Type II; B = EIA Type I

Case Code
(see ratings page)

Case Type
R = Recessed (Standard)

Voltage Rating
10 = 110 12 = 125 22 = 220 33 = 330
11 = 115 16 = 165 25 = 250

Minimum Capacitance
Expressed in microfarads. Always 2, 3, or 4 digits

Resistor
N = No Resistor; R = With Resistor (15K Ohm-2 watts)

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Type PS EIA Type I

Standard Ratings

µF Min	µF Max	Case* Code	Part #
110 Volts AC			
21	25	1	PSB1R1021N
25	30	1	PSB1R1025N
30	36	1	PSB1R1030N
36	43	1	PSB1R1036N
43	53	1	PSB1R1043N
47	56	1	PSB1R1047N
53	64	1	PSB1R1053N
64	77	1	PSB1R1064N
72	88	1	PSB1R1072N
88	108	1	PSB1R1088N
108	130	1	PSB1R10108N
124	149	1	PSB1R10124N
130	156	1	PSB1R10130N
145	175	1	PSB1R10145N
161	193	1	PSB1R10161N
189	227	2	PSB2R10189N
216	259	2	PSB2R10216N
233	280	2	PSB2R10233N
243	292	4	PSB4R10243N
270	324	4	PSB4R10270N
340	408	4	PSB4R10340N
378	440	4	PSB4R10378N
400	480	4	PSB4R10400N
430	516	4	PSB4R10430N
460	552	4	PSB4R10460N
540	648	7	PSB7R10540N
590	708	7	PSB7R10590N
710	850	8	PSB8R10710N
125 Volts AC			
21	25	1	PSB1R1221N
25	30	1	PSB1R1225N
30	36	1	PSB1R1230N
36	43	1	PSB1R1236N
43	53	1	PSB1R1243N
47	56	1	PSB1R1247N
53	64	1	PSB1R1253N
64	77	1	PSB1R1264N
72	88	1	PSB1R1272N
88	108	1	PSB1R1288N
108	130	1	PSB1R12108N
124	149	1	PSB1R12124N
130	156	1	PSB1R12130N
145	175	2	PSB2R12145N

µF Min	µF Max	Case* Code	Part #
125 Volts AC			
161	193	2	PSB2R12161N
189	227	2	PSB2R12189N
216	259	4	PSB4R12216N
233	280	4	PSB4R12233N
243	292	4	PSB4R12243N
270	324	4	PSB4R12270N
340	408	5	PSB5R12340N
378	440	5	PSB5R12378N
400	480	5	PSB5R12400N
430	516	7	PSB7R12430N
460	552	7	PSB7R12460N
560	648	8	PSB8R12560N
165 Volts AC			
21	25	1	PSB1R1621N
25	30	1	PSB1R1625N
30	36	1	PSB1R1630N
36	43	1	PSB1R1636N
43	53	1	PSB1R1643N
47	56	1	PSB1R1647N
53	64	1	PSB1R1653N
64	77	1	PSB1R1664N
72	88	1	PSB1R1672N
88	108	2	PSB2R1688N
108	130	2	PSB2R16108N
124	149	4	PSB4R16124N
130	156	4	PSB4R16130N
145	175	4	PSB4R16145N
161	193	4	PSB4R16161N
189	227	4	PSB4R16189N
216	259	5	PSB5R16216N
233	280	5	PSB5R16233N
243	292	5	PSB5R16243N
270	324	5	PSB5R16270N
340	408	7	PSB7R16340N
400	480	8	PSB8R16400N
220 Volts AC			
21	25	1	PSB1R2221N
25	30	1	PSB1R2225N
30	36	1	PSB1R2230N
36	43	2	PSB2R2236N
43	53	2	PSB2R2243N
47	56	2	PSB2R2247N

µF Min	µF Max	Case* Code	Part #
220 Volts AC			
53	64	4	PSB4R2253N
64	77	4	PSB4R2264N
72	88	4	PSB4R2272N
88	108	4	PSB4R2288N
108	130	5	PSB5R22108N
124	149	5	PSB5R22124N
130	156	5	PSB5R22130N
145	175	7	PSB7R22145N
161	193	8	PSB8R22161N
189	227	8	PSB8R22189N
250 Volts AC			
21	25	1	PSB1R2521N
25	30	1	PSB1R2525N
30	36	2	PSB2R2530N
36	43	2	PSB2R2536N
43	53	4	PSB4R2543N
47	56	4	PSB4R2547N
53	64	4	PSB4R2553N
64	77	4	PSB4R2564N
72	88	4	PSB4R2572N
88	108	5	PSB5R2588N
108	130	5	PSB5R25108N
124	149	7	PSB7R25124N
130	156	8	PSB8R25130N
145	175	8	PSB8R25145N
161	193	8	PSB8R25161N
330 Volts AC			
21	25	2	PSB2R3321N
25	30	2	PSB2R3325N
30	36	4	PSB4R3330N
36	43	4	PSB4R3336N
43	53	4	PSB4R3343N
47	56	4	PSB4R3347N
53	64	5	PSB5R3353N
64	77	5	PSB5R3364N
72	88	5	PSB5R3372N
88	108	7	PSB7R3388N
108	130	8	PSB8R33108N

* Case Codes

Case #	Diameter	Length
0	1.4375	2.000
1	1.4375	2.750
2	1.4375	3.375

Case #	Diameter	Length
3	1.4375	4.375
4	1.8125	3.375
5	1.8125	4.375

Case #	Diameter	Length
6	2.0625	3.375
7	2.0625	4.375
8	2.5625	4.375

Type PS EIA Type II

Standard Ratings

µF Min	µF Max	Case* Code	Part #
110 Volts AC			
21	25	1	PSA1R1021N
25	30	1	PSA1R1025N
30	36	1	PSA1R1030N
36	43	1	PSA1R1036N
43	53	1	PSA1R1043N
47	56	1	PSA1R1047N
53	64	1	PSA1R1053N
64	77	1	PSA1R1064N
72	88	1	PSA1R1072N
88	108	1	PSA1R1088N
108	130	1	PSA1R10108N
124	149	1	PSA1R10124N
130	156	1	PSA1R10130N
145	175	1	PSA1R10145N
161	193	1	PSA1R10161N
189	227	1	PSA1R10189N
216	259	2	PSA2R10216N
233	280	2	PSA2R10233N
243	292	2	PSA2R10243N
270	324	2	PSA2R10270N
340	408	4	PSA4R10340N
378	440	4	PSA4R10378N
400	480	4	PSA4R10400N
430	516	4	PSA4R10430N
460	552	4	PSA4R10460N
540	648	5	PSA5R10540N
590	708	5	PSA5R10590N
710	850	7	PSA7R10710N
829	995	7	PSA7R10829N
1000	1200	8	PSA8R101000N
125 Volts AC			
21	25	1	PSA1R1221N
25	30	1	PSA1R1225N
30	36	1	PSA1R1230N
36	43	1	PSA1R1236N
43	53	1	PSA1R1243N
47	56	1	PSA1R1247N
53	64	1	PSA1R1253N
64	77	1	PSA1R1264N
72	88	1	PSA1R1272N
88	108	1	PSA1R1288N

µF Min	µF Max	Case* Code	Part #
125 Volts AC			
108	130	1	PSA1R12108N
124	149	1	PSA1R12124N
130	156	1	PSA1R12130N
145	175	1	PSA1R12145N
161	193	1	PSA1R12161N
189	227	2	PSA2R12189N
216	259	2	PSA2R12216N
233	280	2	PSA2R12233N
243	292	3	PSA3R12243N
270	324	3	PSA3R12270N
340	408	4	PSA4R12340N
378	440	4	PSA4R12378N
400	480	4	PSA4R12400N
430	516	4	PSA4R12430N
460	552	4	PSA4R12460N
560	648	5	PSA5R12560N
645	774	7	PSA7R12645N
829	995	8	PSA8R12829N
165 Volts AC			
21	25	1	PSA1R1621N
25	30	1	PSA1R1625N
30	36	1	PSA1R1630N
36	43	1	PSA1R1636N
43	53	1	PSA1R1643N
47	56	1	PSA1R1647N
53	64	1	PSA1R1653N
64	77	1	PSA1R1664N
72	88	1	PSA1R1672N
88	108	1	PSA1R1688N
108	130	2	PSA2R16108N
124	149	2	PSA2R16124N
130	156	4	PSA4R16130N
145	175	4	PSA4R16145N
161	193	4	PSA4R16161N
189	227	4	PSA4R16189N
216	259	4	PSA4R16216N
233	280	5	PSA5R16233N
243	292	5	PSA5R16243N
270	324	5	PSA5R16270N
340	408	7	PSA7R16340N
400	480	7	PSA7R16400N
460	552	8	PSA8R16460N

µF Min	µF Max	Case* Code	Part #
220 Volts AC			
21	25	1	PSA1R2221N
25	30	1	PSA1R2225N
30	36	1	PSA1R2230N
36	43	1	PSA1R2236N
43	53	2	PSA2R2243N
47	56	2	PSA2R2247N
53	64	2	PSA2R2253N
64	77	4	PSA4R2264N
72	88	4	PSA4R2272N
88	108	4	PSA4R2288N
108	130	4	PSA4R22108N
124	149	5	PSA5R22124N
130	156	5	PSA5R22130N
145	175	7	PSA7R22145N
161	193	7	PSA7R22161N
189	227	7	PSA7R22189N
233	280	8	PSA8R22233N
270	324	8	PSA8R22270N
250 Volts AC			
21	25	1	PSA1R2521N
25	30	1	PSA1R2525N
30	36	2	PSA2R2530N
36	43	2	PSA2R2536N
43	53	2	PSA2R2543N
47	56	2	PSA2R2547N
53	64	4	PSA4R2553N
64	77	4	PSA4R2564N
72	88	4	PSA4R2572N
88	108	5	PSA5R2588N
108	130	5	PSA5R25108N
124	149	5	PSA5R25124N
130	156	5	PSA5R25130N
145	175	7	PSA7R25145N
161	193	7	PSA7R25161N
189	227	8	PSA8R25189N
233	280	8	PSA8R25233N

* Case Codes

Case #	Diameter	Length
0	1.4375	2.000
1	1.4375	2.750
2	1.4375	3.375

Case #	Diameter	Length
3	1.4375	4.375
4	1.8125	3.375
5	1.8125	4.375

Case #	Diameter	Length
6	2.0625	3.375
7	2.0625	4.375
8	2.5625	4.375

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Type PS EIA Type II

Standard Ratings

µF Min	µF Max	Case* Code	Part #
330 Volts AC			
21	25	2	PSA2R3321N
25	30	2	PSA2R3325N
30	36	4	PSA4R3330N
36	43	4	PSA4R3336N
43	53	4	PSA4R3343N
330 Volts AC			
47	56	4	PSA4R3347N
53	64	5	PSA5R3353N
64	77	5	PSA5R3364N
72	88	5	PSA5R3372N
330 Volts AC			
88	108	7	PSA7R3388N
108	130	8	PSA8R33108N
124	149	8	PSA8R33124N
145	174	8	PSA8R33145N

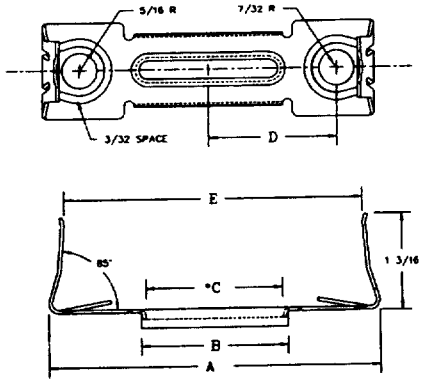
* Case Codes

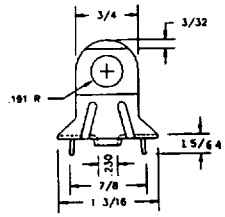
Case #	Diameter	Length
0	1.4375	2.000
1	1.4375	2.750
2	1.4375	3.375
3	1.4375	4.375
4	1.8125	3.375
5	1.8125	4.375
6	2.0625	3.375
7	2.0625	4.375
8	2.5625	4.375

MOUNTING ACCESSORIES

HB Bracket

Type	Case No.	A	B	C*	D	E
HB2	1	3 3/8	1 11/64	1 1/16	1.258	3 1/64
HB4	2-4-6	4 1/64	1 13/16	1 23/32	1 37/64	3 21/32
HB8	3-5-7-8	5 1/64	2 23/32	2	2 5/64	4 21/32



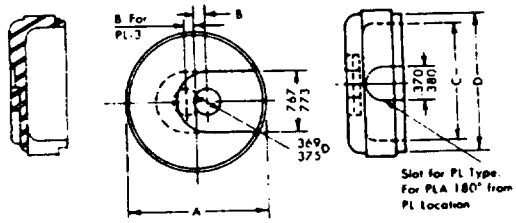


*C dimension = maximum mounting hole center. Use 10/32" flat head screws. Material .042 Spring Steel. Finish: Black Parkerize.

PL and PLA End Caps

When assembling directly to the motor frame, the wires are brought through the bracket hole and soldered to the capacitor terminals. Type PL end cap is then placed in position and the entire assembly snapped into place. Off-motor mounting is similarly accomplished except that Type PLA caps should be used to provide for leads emerging from the opposite side of the cap without going through the bracket hole.

End caps and brackets are shipped loose and should be separately ordered when required. Add A to the PL part numbers if PLA cap is desired (Example: PLA-3).



Top Hole

Bottom Hole

Case #	Type	Dia.	A	B	C	D
1-2-3	PL-3	1 7/16	1.427-1.447	.007-.083	1.088-1.098	1.239-1.244
4-5	PL-6	1 13/16	1.804-1.820	.107-.113	1.463-1.473	1.604-1.614
6-7	PL-8	2 1/16	2.052-2.072	.232-.238	1.713-1.723	1.863-1.869
8	PL-10	2 9/16	2.562-2.571	.482-.488	2.213-2.223	2.363-2.369