

AC MOTOR START CAPACITORS

Features:

- Plastic Case, Moisture and Oil resistant
- Voltages from 110vac to 330VAC
- UL Recognized Capacitors
- UL No.: E232807



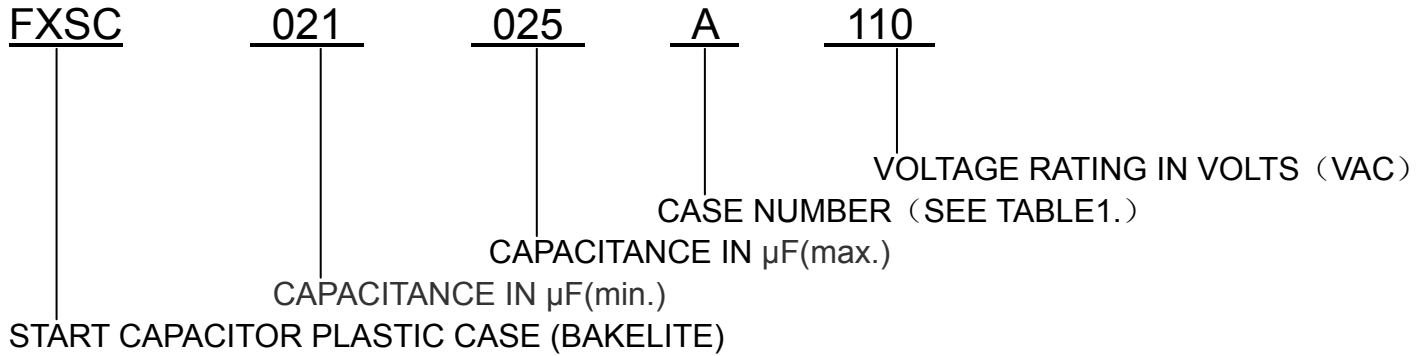
General Specifications:

Operating Temperature	-40~+70°C
Voltage Range	110~330VAC
Capacitance Range	21~1280μF
Capacitance Tolerance	-0%~+20%
Operating Frequency	50~60Hz
Case Size	8 Standard Size from 1.437"x2.750~2.562"x4.375
Termination	1/4"Quick Disconnect Terminals (Std.)
Performance Specification	Meets Requirements of EIA-463-A

Product Description:

This kind of the capacitors are developed and researched according to standard of American Electronics Association (ANSI/EIA-463).The external case of the capacitor is made of bakelite plasticized that its character are not only good insulating resistance and strong resistance damaged but also protecting electro-liquid as good sealed feature. It is popular used for the super AC application as good life, higher degree of reliability and stability.

AC MOTOR START PART NUMBER BREAK-DOWN:



Standard Terminal and Resistor Layouts



Capacitor and Terminal Dimensions

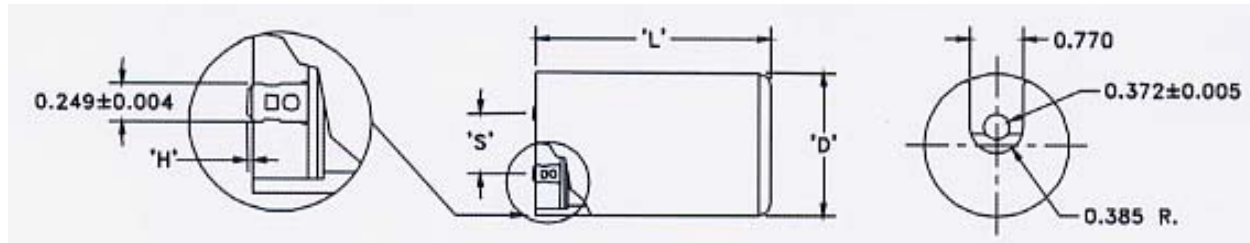


Table1. Case Dimensions (inch)

Case Number	Diameter	Length	S	H
A	1.437	2.750	0.500nom	0.025max
B	1.437	3.365	0.500nom	0.025max
C	1.437	4.365	0.500nom	0.025max
D	1.812	3.365	0.625nom	0.025max
E	1.812	4.365	0.625nom	0.025max
F	2.062	3.365	0.875nom	0.025max
G	2.062	4.365	0.875nom	0.025max
H	2.562	4.365	0.875nom	0.025max

Diameter and Length Tolerance: ± 0.020

STANDARD RATINGS FOR TYPE FXSC

$\mu\text{F}(\text{min.})$	$\mu\text{F}(\text{max.})$	Case Number	Catalog Number	Optional Case Number
110 VOLTS AC				
21	25	A	FXSC021025A110	----
25	30	A	FXSC025030A110	----
30	36	A	FXSC030036A110	----
36	43	A	FXSC036043A110	----
43	52	A	FXSC043052A110	----
47	56	A	FXSC047056A110	----
53	64	A	FXSC053064A110	----
64	77	A	FXSC064077A110	----
72	86	A	FXSC072086A110	----
88	106	A	FXSC088106A110	----
108	130	A	FXSC108130A110	----
124	149	A	FXSC124149A110	----
130	156	A	FXSC130156A110	----
145	174	A	FXSC145174A110	----
161	193	A	FXSC161193A110	----
189	227	A	FXSC189227A110	----
216	259	B	FXSC216259B110	----
233	280	B	FXSC233280B110	----
243	292	B	FXSC243292B110	----
270	324	B	FXSC270324B110	----
324	389	D	FXSC324389D110	B,C
340	408	D	FXSC340408D110	C
378	454	D	FXSC378454D110	C
400	480	D	FXSC400480D110	----
430	516	D	FXSC430516D110	----
460	552	D	FXSC460552D110	C
540	648	E	FXSC540648E110	----
590	708	E	FXSC590708E110	----
645	774	G	FXSC645774G110	----
708	850	G	FXSC708850G110	E,F
720	864	G	FXSC720864G110	----
800	960	G	FXSC800960G110	----
815	978	G	FXSC815978G110	E,F
829	995	G	FXSC829995G110	----
850	1020	H	FXSC8501020H110	G
1000	1200	H	FXSC10001200H110	----
1020	1224	H	FXSC10201224H110	G
1175	1410	H	FXSC11751410H110	G
1280	1536	H	FXSC12801536H110	----

μ F(min.)	μ F(max.)	Case Number	Catalog Number	Optional Case Number
125 VOLTS AC				
21	25	A	FXSC021025A125	----
25	30	A	FXSC025030A125	----
30	36	A	FXSC030036A125	----
36	43	A	FXSC036043A125	----
43	52	A	FXSC043052A125	----
47	56	A	FXSC047056A125	----
53	64	A	FXSC053064A125	----
64	77	A	FXSC064077A125	----
72	86	A	FXSC072086A125	----
88	106	A	FXSC088106A125	----
108	130	A	FXSC108130A125	----
124	149	A	FXSC124149A125	----
130	156	A	FXSC130156A125	----
145	174	A	FXSC145174A125	----
161	193	A	FXSC161193A125	----
189	227	B	FXSC189227B125	----
216	259	B	FXSC216259B125	----
233	280	B	FXSC233280B125	----
243	292	B	FXSC243292B125	C
270	324	B	FXSC270324B125	C
324	389	D	FXSC324389D125	C
340	408	D	FXSC340408D125	C
378	454	D	FXSC378454D125	C
400	480	D	FXSC400480D125	C
430	516	D	FXSC430516D125	C
460	552	D	FXSC460552D125	C
540	648	E	FXSC540648E125	D
590	708	G	FXSC590708G125	E,F
645	774	G	FXSC645774G125	----
708	850	G	FXSC708850G125	E,F
720	864	G	FXSC720864G125	----
800	960	G	FXSC800960G125	----
815	978	G	FXSC815978G125	----
829	995	H	FXSC829995H125	----
850	1020	H	FXSC8501020H125	----
1000	1200	H	FXSC10001200H125	----
1020	1224	H	FXSC10201224H125	----
1175	1410	H	FXSC11751410H125	----

$\mu\text{F}(\text{min.})$	$\mu\text{F}(\text{max.})$	Case Number	Catalog Number	Optional Case Number
165 VOLTS AC				
21	25	A	FXSC021025A165	----
25	30	A	FXSC025030A165	----
30	36	A	FXSC030036A165	----
36	43	A	FXSC036043A165	----
43	52	A	FXSC043052A165	----
47	56	A	FXSC047056A165	----
53	64	A	FXSC053064A165	----
64	77	A	FXSC064077A165	----
72	86	A	FXSC072086A165	----
88	106	A	FXSC088106A165	----
108	130	B	FXSC108130B165	----
124	149	B	FXSC124149B165	----
130	156	D	FXSC130156D165	B,C
145	174	D	FXSC145174D165	B,C
161	193	D	FXSC161193D165	B,C
189	227	D	FXSC189227D165	B,C
216	259	D	FXSC216259D165	C
233	280	E	FXSC233280E165	C,D
243	292	E	FXSC243292E165	C,D
270	324	E	FXSC270324E165	C,D
324	389	E	FXSC324389E165	D
340	408	G	FXSC340408G165	E,F
378	454	G	FXSC378454G165	E,F
400	480	H	FXSC400480H165	E,F,G
460	552	H	FXSC460552H165	E,F,G
540	648	H	FXSC540648H165	G
590	708	H	FXSC590708H165	G
645	774	H	FXSC645774H165	----
708	850	H	FXSC708850H165	G
720	864	H	FXSC720864H165	----
800	960	H	FXSC800960H165	----
815	978	H	FXSC815978H165	----
829	995	H	FXSC829995H165	----
850	1020	H	FXSC8501020H165	----

$\mu\text{F}(\text{min.})$	$\mu\text{F}(\text{max.})$	Case Number	Catalog Number	Optional Case Number
220 VOLTS AC				
21	25	A	FXSC021025A220	----
25	30	A	FXSC025030A220	----
30	36	A	FXSC030036A220	----
36	43	A	FXSC036043A220	----
43	52	A	FXSC043052A220	----
47	56	A	FXSC047056A220	----
53	64	A	FXSC053064A220	----
64	77	A	FXSC064077A220	B,C
72	86	A	FXSC072086A220	C
88	106	A	FXSC088106A220	C
108	130	B	FXSC108130B220	----
124	149	B	FXSC124149B220	----
130	156	D	FXSC130156D220	----
145	174	D	FXSC145174D220	E,F
161	193	D	FXSC161193D220	E,F
189	227	D	FXSC189227D220	----
216	259	D	FXSC216259D220	G
233	280	E	FXSC233280E220	G
243	292	E	FXSC243292E220	G
270	324	E	FXSC270324E220	G
324	389	E	FXSC324389E220	G
340	408	G	FXSC340408G220	----
378	454	G	FXSC378454G220	----
400	480	H	FXSC400480H220	----
430	516	H	FXSC430516H220	----

$\mu\text{F}(\text{min.})$	$\mu\text{F}(\text{max.})$	Case Number	Catalog Number	Optional Case Number
250 VOLTS AC				
21	25	A	FXSC021025A250	----
25	30	A	FXSC025030A250	----
30	36	B	FXSC030036B250	----
36	43	B	FXSC036043B250	----
43	52	B	FXSC043052B250	----
47	56	B	FXSC047056B250	----
53	64	D	FXSC053064D250	B,C
64	77	D	FXSC064077D250	B,C
72	86	D	FXSC072086D250	C
88	106	E	FXSC088106E250	C,D
108	130	E	FXSC108130E250	----
124	149	E	FXSC124149E250	----
130	156	E	FXSC130156E250	----
145	174	G	FXSC145174G250	----
161	193	G	FXSC161193G250	----
189	227	H	FXSC189227H250	----
216	259	H	FXSC216259H250	----

233	280	H	FXSC233280H250	----
243	292	H	FXSC243292H250	----
270	324	H	FXSC270324H250	----
324	389	H	FXSC324389H250	----
340	408	H	FXSC340408H250	----
378	454	H	FXSC378454H250	----
400	480	H	FXSC400480H250	----
430	516	H	FXSC430516H250	----

μ F(min.)	μ F(max.)	Case Number	Catalog Number	Optional Case Number
330 VOLTS AC				
21	25	B	FXSC021025B330	A
25	30	B	FXSC025030B330	A
30	36	D	FXSC030036D330	A,B,C
36	43	D	FXSC036043D330	B,C
43	52	D	FXSC043052D330	C
47	56	D	FXSC047056D330	C
53	64	E	FXSC053064E330	C,D
64	77	E	FXSC064077E330	----
72	86	E	FXSC072086E330	----
88	106	G	FXSC088106G330	E,F,G
108	130	H	FXSC108130H330	G
124	149	H	FXSC124149H330	G
130	156	H	FXSC130156H330	G
145	174	H	FXSC145174H330	G
161	193	H	FXSC161193H330	----
189	227	H	FXSC189227H330	----
216	259	H	FXSC216259H330	----
233	280	H	FXSC233280H330	----
243	292	H	FXSC243292H330	----
270	324	H	FXSC270324H330	----

Motor Torque Multiplier

Relay and Hart Start Capacitor

FXMTM-5&FXMTM-6

Features/Benefits—

- For Tight Compressors
- Low Voltage
- Quick Recycling
- No Additional Wires Required

Applications—

- One size for all compressors from 1/12 hp through 10 hp
- For domestic and commercial refrigeration systems and freezers
- For use on any single phase air conditioning and refrigeration unit

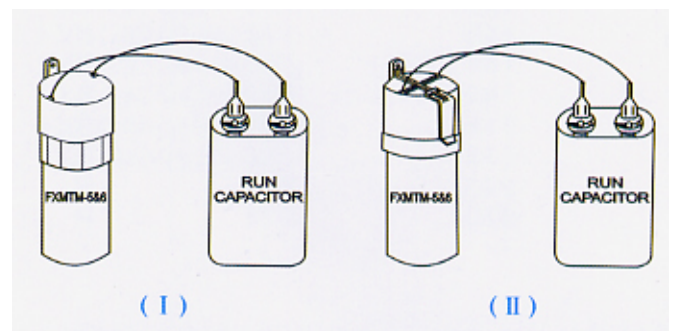


Specifications—

Part No.	Operating Voltage	Capacitance	Equipment Range	Recommended Range	Increased Torque
FXMTM-5	115-277VAC	43~52 uF	1/2-5HP	1/3-2HP	300% (270 oz.in.)
FXMTM-6	115-277VAC	130~156 uF	1/2-10HP	1/2-4HP	500% (390 oz.in.)

Installation instructions—

Connect the two wires from the FXMTM-5(6) in parallel with the run capacitor (one wire each side) without removing any original wires. Use special "piggy back" terminal of the FXMTM-5(6) if all the run capacitor terminals are being used.



Solid State Relay Overload Start Capacitor Combination

FXMTM-410&FXMTM-810

Features/Benefits—

- For Tight Compressors
- Low Voltage
- Quick Recycling
- No Additional Wires Required

Applications—

For use on any single phase air conditioning and refrigeration unit. See specifications below for voltage ranges and recommended ranges and overload protectors.

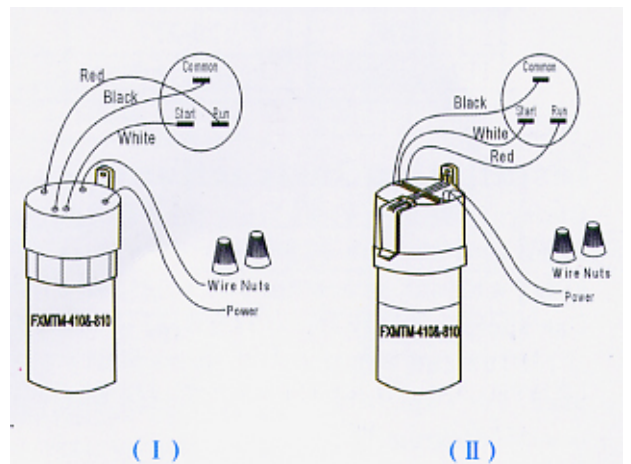


Specifications—

Part No.	Operating Voltage	Capacitance	Recommended Range	OVERLOAD PROTECTOR		
				Break Time(S)	Open Temp.	Close Temp.
FXMTM-810	115VAC	145~174 uF	1/12-1/5HP	AT 12AMPS 24°C 5~17	120°C ± 5°C	60°C ± 9°C
FXMTM-410	115VAC	243~292 uF	1/4-1/3HP	AT 22AMPS 24°C 5~17	120°C ± 5°C	60°C ± 9°C

Installation instructions—

1. Disconnect power supply.
2. Remove old relay and overload.
3. Connect WHITE wire terminal on FXMTM410(810) onto START terminal of compressor.
4. Connect RED wire terminal on FXMTM410(810) onto RUN terminal of compressor.
5. Connect BLACK wire terminal on FXMTM410(810) onto COMMON terminal of compressor.
6. Connect one line wire, removed from old relay, to one of the wires of the FXMTM410(810), using wire nut.
7. Connect the other line wire, removed from the old overload, to the other line wire of the Fxmtm410(810),using wire nut.



RELAY AND Hart Start Capacitor

FX8E E CLASS

Features/Benefits—

- Electronic Potential Relay Technology
- Backup safety timing circuit to protect the compressor
- Voltage Sensing
- Instant Restart



TQ 06

Applications—

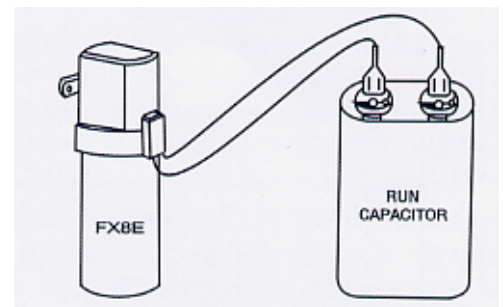
For use on any single phase air conditioning and refrigeration unit. See specifications below for voltage ranges and recommended equipment sizes.

Specifications—

Part No.	Operating Voltage (VAC)	Capacitance (uF)	Equipment Range (HP)	Recommended Range (HP)
FX4E	90-130	88 ~ 106 uF	1/12~1	1/8~1
FX5E	170-277	43 ~ 52 uF	1/12~10	1/3~2
FX6E	170-277	88 ~ 106 uF	1/12~10	1/2~3
FX7E	170-277	130 ~ 156 uF	1/12~10	1~4
FX8E	170-277	189 ~ 227 uF	1/12~10	1~5
FX9E	170-277	233 ~ 280 uF	1/12~10	1~5
FX10E	170-277	270 ~ 324 uF	1/12~10	3~5

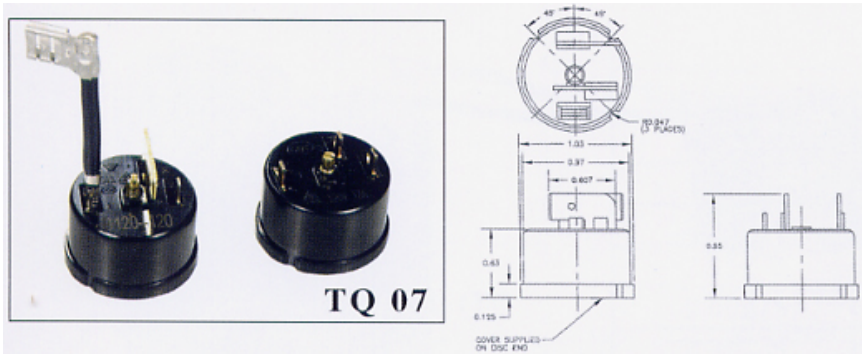
Installation instructions—

Connect the two wires from the FX8E in parallel with the run capacitor (one wire each side) without removing any original wires. Use special "Piggy Back" terminal of the FX8E if all the run capacitor terminals are being used. For Capacitor Start Induction Run Units see the diagram.



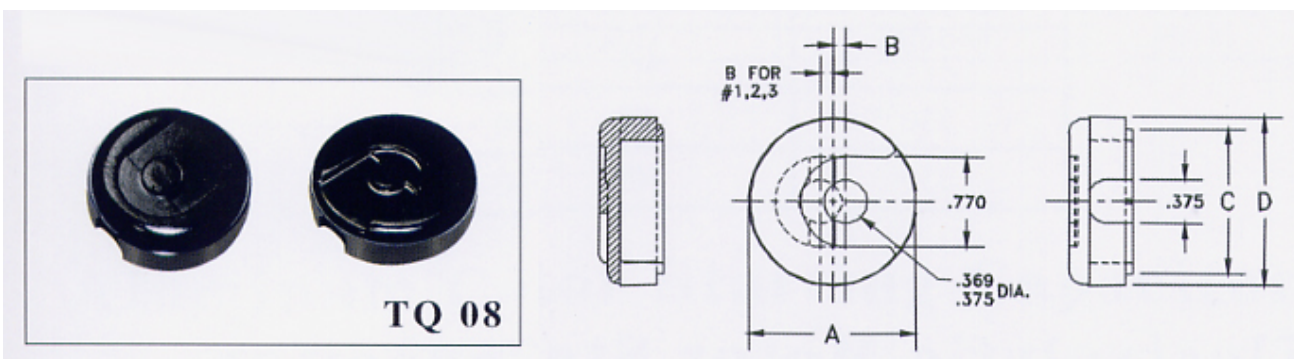
Mounting Accessories

OVERLOAD PROTECTOR



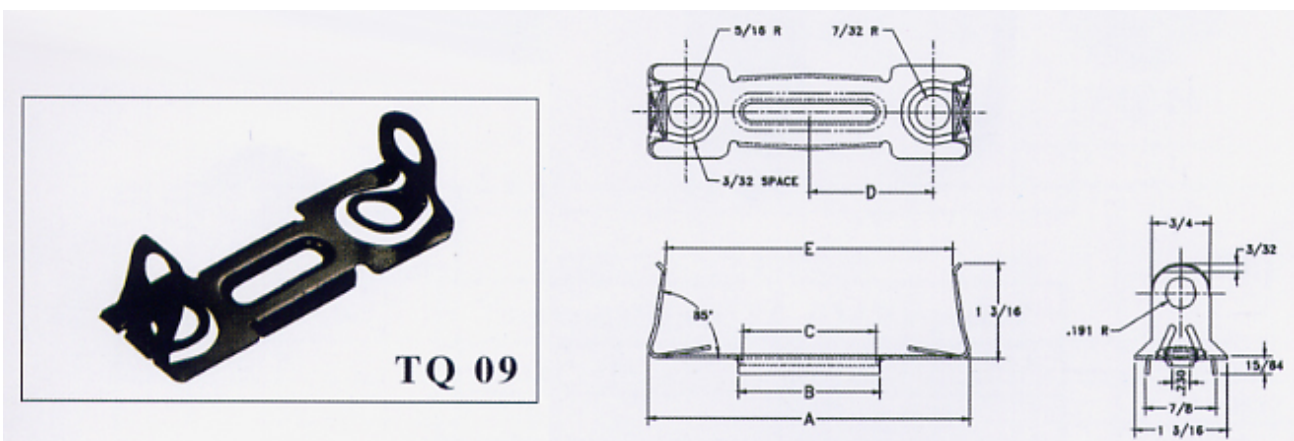
Products No.	Horse power (HP)	Break Time (S)	Temperature (°C)
FXTQ18	1/8	7-15	25±2
FXTQ16	1/6	7-15	25±2
FXTQ15	1/5	7-15	25±2
FXTQ14	1/4	7-15	25±2
FXTQ13	1/3	7-15	25±2

END CAPS



Case Size	Products No.	Dia.	A(Inches)	B(Inches)	C(Inches)	D(Inches)
A,B,C	FXTQ37	1 7/16	1.437	0.080	1.093	1.241
D&E	FXTQ46	1 13/16	1.812	0.110	1.468	1.611
F&G	FXTQ52	2 1/16	2.062	0.235	1.718	1.866
H	FXTQ65	2 9/16	2.562	0.485	2.218	2.366

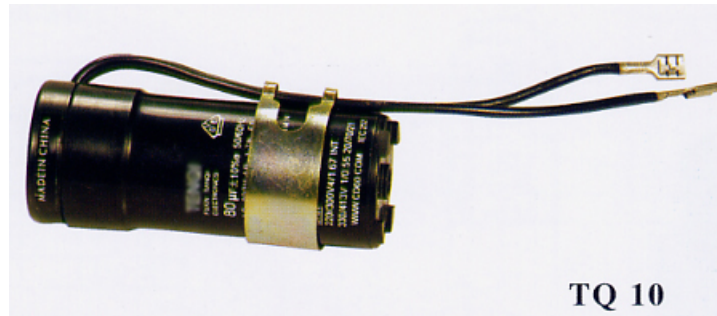
BRACKET



Case Size	Products No.	A(Inches)	B(Inches)	C(Inches)	D(Inches)	E(Inches)
A	FXTQ70	3.375	1.171	1.062	1.258	3.015
B,D,F	FXTQ86	4.050	1.812	1.703	1.578	3.656
C,E,G,H	FXTQ111	5.050	2.718	2.000	2.078	4.656

All dimensions ±0.015" Material—0/042 Spring Steel. Finish—Black Parkerize
 Note: all the above dimensions are in inches.

Defrost Compressor Start Capacitor



Voltage (VAC)	Capacitance(μF)	∅xH(mm)
330	64	38x100
330	80	38x100
330	100	38x100

Electrolytic Motor Starting Capacitor



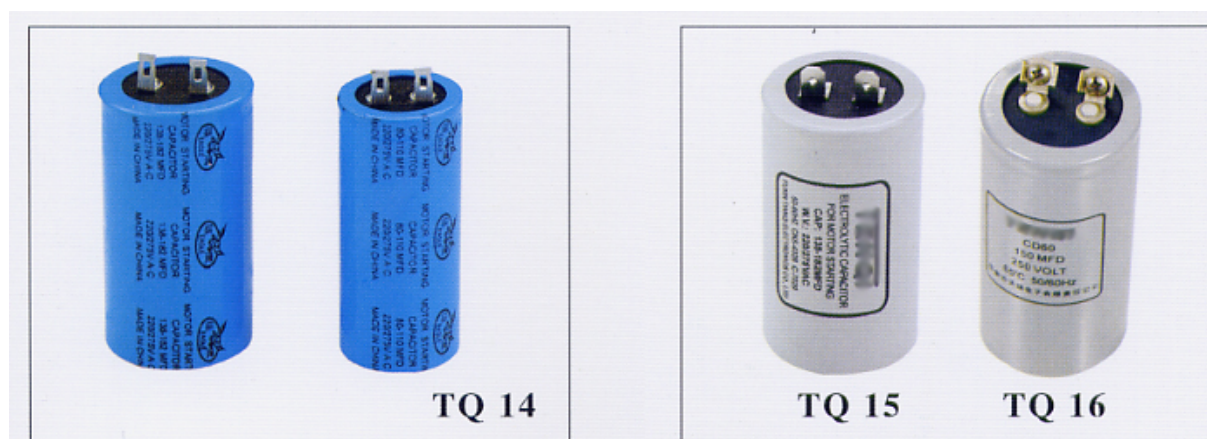
Voltage(VAC)	Capacitance(μ F)	ΦxH(mm)
275/320	40	36x100
275/320	60	36x100
275/320	80	36x100
275/320	100	36x100
275/320	120	36x100
275/320	160	46x124
275/320	180	46x124
275/320	200	46x124
275/320	300	46x124

Blue Color Starting Capacitor



Voltage(VAC)	Capacitance(μ F)	Φ xH(mm)
220/275	161-193	50x111
220/275	189-227	50x111
220/275	216-259	50x111
220/275	250-324	50x111
220/275	270-324	50x111
220/275	300-350	50x111
220/275	400-500	50x111
220/275	540-648	50x111

Aluminium Case Series Start Capacitor



Voltage(VAC)					
Φ xH(mm)	110/125	125	220/275	250	300
Capacitance(μ F)					
50	34x80	34x80	34x80	34x80	34x80
75	34x80	34x80	34x80	34x80	34x80
100	34x80	34x80	42x80	42x80	45x88
150	34x80	34x80	45x88	45x88	50x100
200	34x80	34x80	50x100	50x100	50x100
250	34x80	34x80	50x100	50x100	50x100
300	42x80	42x80	50x100	50x100	50x100
400	45x88	45x88	50x100	50x100	50x100
500	50x100	50x100	50x100	50x100	60x100
600	50x100	50x100	60x120	60x120	65x120
800	60x100	60x100	60x120	60x120	65x120