

SAMWHA

CAPACITOR

High Performance Capacitors Since 1956

Inside All The E-devices



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SAMWHA

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High Performance Capacitors Since 1956



Samwha (Thailand) Co.,Ltd was founded in 1997 as Samwha's manufacturing base in Southeast Asia. It is a part of the global network strategy of Samwha Group. It began by producing ferrite cores, high voltage capacitor and low voltage power capacitor. Furthermore, Samwha (Thailand) Co.,Ltd. is playing a major role in its development in Thailand, publicizing the image of Samwha Group, to ultimately become a leading company.



COMPANY HISTORY

SAMWHA THAILAND

- 1997.11 Establish Samwha (Thailand) Co.,Ltd.
- 2002.03 Factory Extend Construction Motor Running Capacitor
- 2003.05 Began mass Production of Motor Running Capacitor
- 2004.06 ISO 9001: 2000 Certification
- 2006.09 Began mass Production of Low Voltage Power Capacitor
- 2009.05 ISO 14001: 2004 Certification
- 2010.08 ISO 14001: 2004 Certification
- 2010.10 TISI Certificate of Low Voltage Power Capacitor.

AFFILIATED COMPANY

- | | |
|--------------------|-----------------------------|
| Samwha Thailand | PT. SAMCON |
| Samwha Electronics | Qingdao Samwha Electronics |
| Korea JCC | Samwha Enterprise |
| Samwha Europe GmbH | Samwha Hongkong |
| Samwha India | Tianjin Samwha Electric |
| Samwha U.S.A. | Samwha Poland |
| Samwha Electric | Samwha Tecom |
| Samwha Trading | Tianjin Samwha Hi-Tech Intl |
| PT. SI | |



LOW VOLTAGE POWER CAPACITOR PRODUCT SCOPE

The power range from 2.5 to 75Kvar compatible with the electrical system, 1-phase and 3-phase, depending on the needs of corporate clients. Samwha dry type capacitor is especially intended for Power factor correction in industry and semi-industry. The capacitors are manufactured using Metalized Polypropylene film as the dielectric and housed in cylindrical aluminum case.

The three-phase capacitor is composed of the single-phase delta element stacks. The electrodes are connected by metal spraying the face ends of the winding elements. The winding elements are encapsulated in cylindrical aluminum case hermetically sealed either by a press-rolled metal lid or plastic disk with fast-on terminal.



PRODUCT SCOPE		PRODUCT SCOPE	
Type	: Dry type (Cylinder type / Unit type)	Type	: Oil type
Voltage Range	: 220V to 1,000V	Voltage Range	: 220V to 1,000V
Frequency	: 50Hz, 60Hz	Frequency	: 50Hz, 60Hz
Power Range	: 2.5Kvar to 75Kvar	Power Range	: 5Kvar to 50Kvar
Capacitor Loss	: Total 0.35W / Kvar	Capacitor Loss	: Total 0.35W / Kvar
Capacity Tolerance	: -5% ~ 10% (at 20°C)	Capacity Tolerance	: -5% ~ 10% (at 20°C)
Max Overvoltage	: Un + 10% [up to 8 hours daily] Un + 15% [up to 30 mins daily] Un + 20% [up to 5 mins monthly] Un + 30% [up to 1 mins monthly]	Max Overvoltage	: Un + 10% [up to 8 hours daily] Un + 15% [up to 30 mins daily] Un + 20% [up to 5 mins monthly] Un + 30% [up to 1 mins monthly]
Max Overcurrent	: 1.3 x In	Max Overcurrent	: 1.3 x In
Withstand Voltage	: 2.15 x Un (10 seconds)	Withstand Voltage	: 2.15 x Un (10 seconds)
Connection	: 3 Phase (Single phase on request)	Connection	: 3 Phase (Single phase on request)
Insulation level	: 3 / 15Kv	Insulation level	: 3 / 15Kv
Dielectric	: Polypropylene	Dielectric	: Polypropylene
Ambient Temp	: -25°C ~ 55°C	Ambient Temp	: -25°C ~ 55°C
Discharge	: Internal / External discharge module	Discharge	: Internal / External discharge module
Cooling	: Natural forced	Cooling	: Natural forced
Impregnation	: Epoxy resin	Impregnation	: Capacitor oil (non PCB)
Safety	: Self - healing technology Overpressure disconnector	Safety	: Self - healing technology Overpressure disconnector
Installation Place	: Indoor / Outdoor	Installation Place	: Indoor
Applicable Standards	: IEC60831 - 1,2	Applicable Standards	: IEC60831 - 1,2

LOW VOLTAGE POWER CAPACITOR

DRY TYPE (CYLINDER) / (UNIT)



LOW VOLTAGE POWER CAPACITOR DRY TYPE (CYLINDER)						LOW VOLTAGE POWER CAPACITOR DRY TYPE (UNIT)					
Part No.	Rated (Kvar)	Cn (uF)	Current In (Amp)	Dimensions D*H (mm.)	Stud Screw	Part No.	Rated (Kvar)	Cn (uF)	Current In (Amp)	Dimensions W*L*H (mm.)	Stud Screw
Dry type capacitor_Cylinder (3 Phase, 50Hz) 400 VAC						Dry type capacitor_Unit (3 Phase, 50Hz) 400 VAC					
RMC-4050050KT	5	99.5	7.2	86*140	M12	IMB-4050050KT	5	99.5	7.2	155*185*320	M6
RMC-4050075KT	7.5	149.2	10.8	86*230	M12	IMB-4050075KT	7.5	149.2	10.8	155*185*320	M6
RMC-4050100KT	10	198.9	14.4	86*230	M12	IMB-4050100KT	10	198.9	14.4	155*185*320	M6
RMC-4050125KT	12.5	248.7	18	86*275	M12	IMB-4050125KT	12.5	248.7	18	155*185*320	M6
RMC-4050150KT	15	298.4	21.7	96*275	M12	IMB-4050150KT	15	298.4	21.7	155*185*320	M6
RMC-4050200KT	20	397.9	28.9	116*275	M12	IMB-4050200KT	20	397.9	28.9	155*185*320	M6
RMC-4050250KT	25	497.4	36.1	116*275	M16	IMB-4050250KT	25	497.4	36.1	155*185*320	M6
RMC-4050300KT	30	596.8	43.3	136*305	M12	IMB-4050300KT	30	596.8	43.3	155*355*400	M8
RMC-4050400KT	40	795.8	57.7	136*380	M12	IMB-4050400KT	40	795.8	57.7	155*355*400	M8
RMC-4050500KT	50	994.7	72.2	136*380	M12	IMB-4050450KT	45	895.2	65	155*355*400	M8
Dry type capacitor_Cylinder (3 Phase, 50Hz) 415 VAC						IMB-4050500KT	50	994.7	72.2	155*355*400	M8
RMC-4150050KT	5	92.4	7.0	86*140	M12	IMB-4050600KT	60	1193.7	86.6	230*355*400	M10
RMC-4150075KT	7.5	138.6	10.4	86*170	M12	IMB-4050750KT	75	1492.1	108.3	230*355*400	M10
RMC-4150100KT	10	184.8	13.9	86*230	M12	Dry type capacitor_Unit (3 Phase, 50Hz) 440 VAC					
RMC-4150125KT	12.5	231.0	17.4	86*230	M12	IMB-4450050KT	5	82.2	6.6	155*185*320	M6
RMC-4150150KT	15	277.2	20.9	86*275	M12	IMB-4450075KT	7.5	123.3	9.8	155*185*320	M6
RMC-4150200KT	20	396.6	27.8	96*275	M12	IMB-4450100KT	10	164.4	13.1	155*185*320	M6
RMC-4150250KT	25	462.1	34.8	116*275	M12	IMB-4450125KT	12.5	205.5	16.4	155*185*320	M6
RMC-4150300KT	30	554.5	41.7	116*305	M12	IMB-4450150KT	15	246.6	19.7	155*185*320	M6
RMC-4150400KT	40	739.3	55.6	136*305	M12	IMB-4450200KT	20	328.8	26.2	155*185*320	M6
RMC-4150500KT	50	924.1	69.6	136*380	M12	IMB-4450250KT	25	411	32.8	155*185*320	M6
Dry type capacitor_Cylinder (3 Phase, 50Hz) 440 VAC						IMB-4450300KT	30	493.2	39.4	155*355*400	M8
RMC-4450050KT	5	82.2	6.6	86*140	M12	IMB-4450400KT	40	657.7	52.5	155*355*400	M8
RMC-4450075KT	7.5	123.3	9.8	86*170	M12	IMB-4450450KT	45	739.9	59	155*355*400	M8
RMC-4450100KT	10	164.4	13.1	86*230	M12	IMB-4450500KT	50	822.1	65.6	155*355*400	M8
RMC-4450125KT	12.5	205.5	16.4	86*230	M12	IMB-4450600KT	60	986.5	78.7	230*355*400	M10
RMC-4450150KT	15	246.6	19.7	86*275	M12	IMB-4450750KT	75	1233.1	98.4	230*355*400	M10
RMC-4450200KT	20	328.8	26.2	96*275	M12	Dry type capacitor_Unit (3 Phase, 50Hz) 525 VAC					
RMC-4450250KT	25	411	32.8	116*275	M12	IMB-5250050KT	5	57.7	5.5	155*185*320	M6
RMC-4450300KT	30	493.2	39.4	116*275	M16	IMB-5250075KT	7.5	86.6	8.2	155*185*320	M6
RMC-4450400KT	40	657.7	52.5	136*305	M12	IMB-5250100KT	10	115.5	11	155*185*320	M6
RMC-4450500KT	50	822.1	65.6	136*380	M12	IMB-5250125KT	12.5	144.4	13.7	155*185*320	M6
Dry type capacitor_Cylinder (3 Phase, 50Hz) 525 VAC						IMB-5250150KT	15	173.2	16.5	155*185*320	M6
RMC-5250050KT	5	57.7	5.5	86*170	M12	IMB-5250200KT	20	231	22	155*185*320	M6
RMC-5250075KT	7.5	86.6	8.2	86*230	M12	IMB-5250250KT	25	288.7	27.5	155*185*320	M6
RMC-5250100KT	10	115.5	11	86*275	M12	IMB-5250300KT	30	346.5	33	155*355*400	M8
RMC-5250125KT	12.5	144.4	13.7	96*275	M12	IMB-5250400KT	40	461.9	44	155*355*400	M8
RMC-5250150KT	15	173.2	16.5	116*275	M12	IMB-5250450KT	45	519.7	49.5	155*355*400	M8
RMC-5250200KT	20	231	22	116*275	M12	IMB-5250500KT	50	577.4	55	155*355*400	M8
RMC-5250250KT	25	288.7	27.5	136*305	M16	IMB-5250600KT	60	692.9	66	230*355*400	M10
RMC-5250300KT	30	346.5	33	136*305	M12	IMB-5250750KT	75	866.1	82.5	230*355*400	M10
RMC-5250400KT	40	461.9	44	136*380	M12						
RMC-5250500KT	50	577.4	55	136*380	M12						

LOW VOLTAGE POWER CAPACITOR

DRY TYPE OUTDOOR



LOW VOLTAGE POWER CAPACITOR DRY TYPE (OUTDOOR)

Part No.	Rated (Kvar)	Cn (uF)	Current In (Amp)	Dimensions W*L*H (mm.)	Supporting (mm.)
Dry type capacitor_Outdoor (1 Phase, 50Hz) 230 VAC					
EMB--2350050KS	5	300.9	21.7	100*220*370	200
EMB--2350075KS	7.5	451.3	32.6	100*220*370	200
EMB--2350100KS	10	601.7	43.5	100*220*370	200
EMB--2350125KS	12.5	752.2	54.3	100*220*370	200
EMB--2350150KS	15	902.6	65.2	100*220*370	200
Dry type capacitor_Outdoor (3 Phase, 50Hz) 400 VAC					
EMB--4050050KT	5	99.5	7.2	100*220*370	200
EMB--4050100KT	10	198.9	14.4	100*220*370	200
EMB--4050150KT	15	298.4	21.7	100*220*370	200
EMB--4050200KT	20	397.9	28.9	150*220*370	200
EMB--4050250KT	25	497.4	36.1	150*220*370	200
EMB--4050300KT	30	596.8	43.3	150*220*370	200
EMB--4050450KT	45	895.2	65	110*210*570	200
EMB--4050500KT	50	994.7	72.2	110*210*570	200
EMB--4050600KT	60	1193.7	86.6	110*310*570	200
EMB--4050750KT	75	1492.1	108.3	110*310*570	200
Dry type capacitor_Outdoor (3 Phase, 50Hz) 415 VAC					
EMB--4150050KT	5	92.4	7	100*220*370	200
EMB--4150100KT	10	184.8	13.9	100*220*370	200
EMB--4150150KT	15	277.2	20.9	100*220*370	200
EMB--4150200KT	20	369.6	27.8	150*220*370	200
EMB--4150250KT	25	462.1	34.8	150*220*370	200
EMB--4150300KT	30	554.5	41.7	150*220*370	200
EMB--4150450KT	45	831.7	62.6	110*210*570	200
EMB--4150500KT	50	924.1	69.6	110*210*570	200
EMB--4150600KT	60	1108.9	83.5	110*310*570	200
EMB--4150750KT	75	1386.2	104.3	110*310*570	200

LOW VOLTAGE POWER CAPACITOR

Figure 1- QMM Type

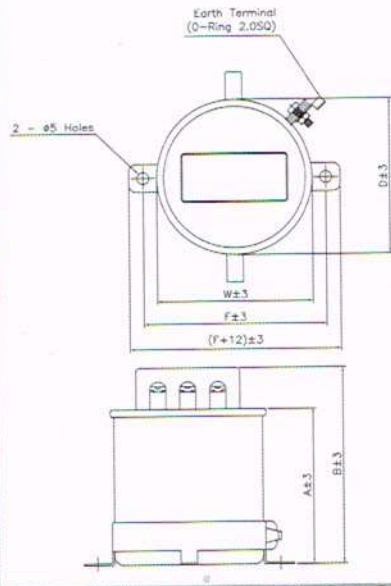


Figure 2- SMS Type

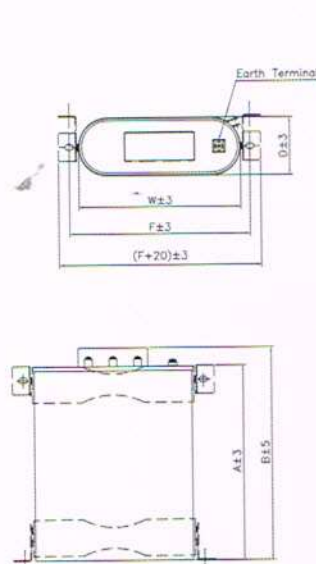


Figure 3- SMB Type

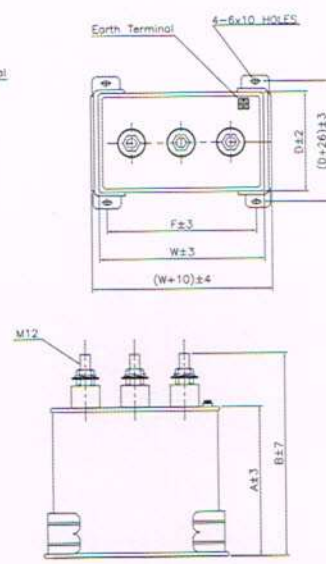
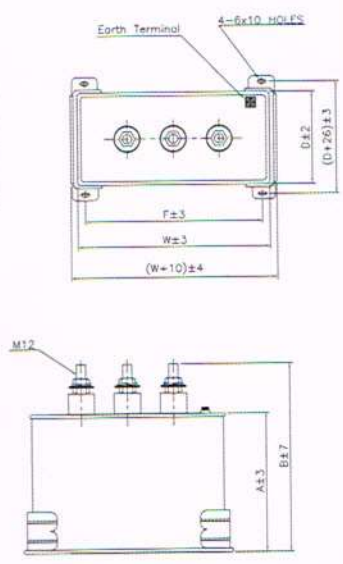


Figure 4- SMB Type



Rating and Dimension - 400V 50Hz 3 Phase

Type	Capacity		Current	Dimension [mm]					Drawing
	[µF]	[kvar]		A	B	W	F	D	
QMM-4050010T	10	0.5	0.7	65	85	63	77	63	Figure 1
QMM-4050015T	15	0.8	1.1	110	130	63	77	63	
QMM-4050020T	20	1.0	1.5	110	130	63	77	63	
QMM-4050025T	25	1.3	1.8	135	155	63	77	63	
QMM-4050030T	30	1.5	2.2	135	155	63	77	63	
QMM-4050040T	40	2.0	2.9	135	155	63	77	63	
SMS-4050050T	50	2.5	3.6	105	125	170	190	60	Figure 2
SMS-4050075T	75	3.8	5.4	105	125	170	190	60	
SMS-4050100T	100	5.0	7.3	130	150	170	190	60	
SMS-4050150T	150	7.5	10.9	155	175	170	190	60	
SMS-4050200T	200	10.1	14.5	205	225	170	190	60	
SMS-4050250T	250	12.6	18.1	255	275	170	190	60	
SMS-4050300T	300	15.1	21.8	255	275	170	190	60	Figure 3
SMS-4050100KT	198.9	10	14.4	205	225	170	190	60	
SMS-4050150KT	298.4	15	21.7	255	275	170	190	60	
SMB-4050200KT	397.9	20	28.9	180	245	200	170	120	
SMB-4050250KT	497.4	25	36.1	220	285	200	170	120	
SMB-4050300KT	596.8	30	43.3	240	305	200	170	120	
SMB-4050400KT	795.8	40	57.7	290	355	200	170	120	Figure 4
SMB-4050500KT	994.7	50	72.2	350	415	200	170	120	
SMB-4050600KT	1194	60	86.6	290	355	300	270	120	Figure 4
SMB-4050700KT	1393	70	101	300	365	300	270	120	

Rating and Dimension - 440V 50Hz 3 Phase

Type	Capacity		Current	Dimension [mm]					Drawing
	[µF]	[kvar]		A	B	W	F	D	
QMM-4450010T	10	0.6	1.4	110	130	63	77	63	Figure 1
QMM-4450015T	15	0.9	1.2	110	130	63	77	63	
QMM-4450020T	20	1.2	1.6	110	130	63	77	63	
QMM-4450025T	25	1.5	2.0	135	155	63	77	63	
QMM-4450030T	30	1.8	2.4	135	155	63	77	63	
QMM-4450040T	40	2.4	3.2	135	155	63	77	63	
SMS-4450050T	50	3.0	4.0	105	125	170	190	60	Figure 2
SMS-4450075T	75	4.6	6.0	105	125	170	190	60	
SMS-4450100T	100	6.1	8.0	130	150	170	190	60	
SMS-4450150T	150	9.1	12.0	155	175	170	190	60	
SMS-4450200T	200	12.2	16.0	205	225	170	190	60	
SMS-4450250T	250	15.2	20.0	255	275	170	190	60	
SMS-4450300T	300	18.2	23.9	255	275	170	190	60	Figure 3
SMS-4450100KT	164.4	10	13.1	155	175	170	190	60	
SMS-4450150KT	246.6	15	19.7	205	225	170	190	60	
SMS-4450200KT	327.8	20	26.2	255	275	200	170	120	
SMB-4450250KT	411.0	25	32.8	220	285	200	170	120	
SMB-4450300KT	493.2	30	39.4	240	305	200	170	120	
SMB-4450400KT	657.7	40	52.5	300	365	200	170	120	Figure 4
SMB-4450500KT	822.1	50	65.6	360	425	200	170	120	
SMB-4450600KT	986	60	78.7	300	365	300	270	120	Figure 4
SMB-4450700KT	1151	70	91.9	310	375	300	270	120	

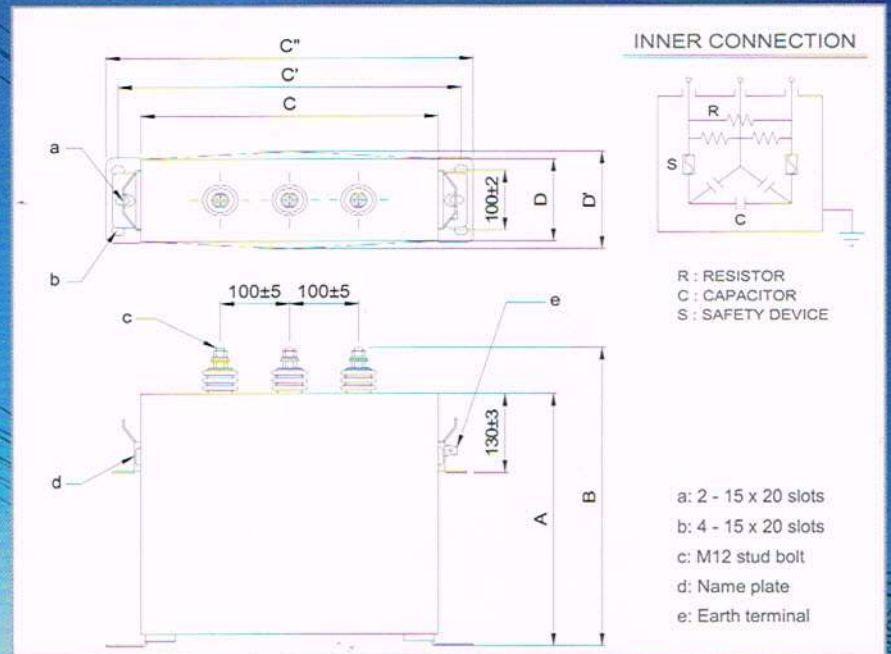
OIL TYPE

** Approximate dimension and weight are given above. Please contact to factory for exact dimensions of a particular unit before order



LOW VOLTAGE POWER CAPACITOR

OIL TYPE (STEEL CASE)



RATING and DIMENSION 415V 50Hz 3Phase

Part No.	Rated	Cn	Current	Dimension (mm) **			
	(Kvar)	(uF)	In (Amp)	A	B	C	D
SMF-4150500KT	50	924	69.6	280	365	343	153
SMF-4150750KT	75	1386	104.3	320	395	343	153
SMF-4151000KT	100	1848	139.1	360	435	343	153
SMF-4151500KT	150	2772	208.7	480	555	343	153

RATING and DIMENSION 440V 50Hz 3Phase

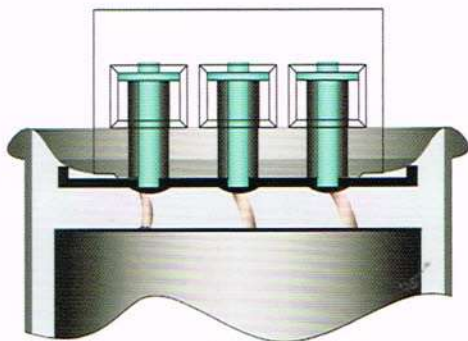
Part No.	Rated	Cn	Current	Dimension (mm) **			
	(Kvar)	(uF)	In (Amp)	A	B	C	D
SMF-4450500KT	50	822	65.6	280	365	343	153
SMF-4450750KT	75	1233	98.4	340	415	343	153
SMF-4451000KT	100	1644	131.2	400	485	343	153
SMF-4451500KT	150	2466	196.8	520	605	430	135

OIL TYPE (STEEL CASE)

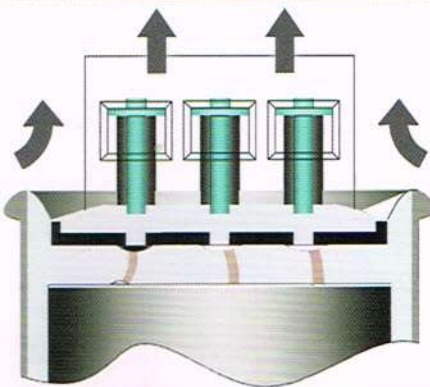
** Approximate dimension and weight are given above.
Please contact to factory for exact dimensions of a particular unit before order.



OPERATING CONDITION



TORN-OFF CONDITION



PROTECTION OF THE CAPACITOR

In order to prevent damage. Caused by defective electrical systems or as the capacitor itself, if the failure of the capacitor, will cause the gas inside the capacitor. This pressure will cause the top of capacitor cover swelling. (Because they were designed to be the thinnest point) when the lid was swollen, will draw the connection of electricity sent to capacitor deficiency resulting from the circuit cut off.

Operating temperature

Capacitor has been classified by the temperature used as an indicator. Each category is assigned a letter and the with the numbers below A[+40°C], B[+4°C], C[+50°C], D[+55°C] The letter refers to a class that displays the temperature of use and the number refers to the temperature used of the capacitor. Which is the temperature, use the tag to the product details (Name plate) on all products.

Installation place

1. Ambient temperature shall not exceed -25°C to +55°C (average temperature per day shall be less than 45°C)
2. Installation place shall be dry and well ventilated. Avoid the places such as where corrosive gases or dust are much or agitation occurs. Capacitor rack shall be installed on the base of concrete and tightened with bolt.
3. Use twisted wire for connecting to capacitor. The square of wire shall be more than 1.35 times of rated current of capacitors.
4. Capacitor has been produced with built in discharge resistance so that when it is opened from the circuit, the residual voltage can be reduced to less than 75V within 3 mins. if the switch is turn on again when the residual voltage is not discharge enough. DC voltage becomes double and can be the cause of damage to capacitor. When it is turn on/off within short time (within 5 seconds), employment of discharging coil is desirable.

Check point

1. Allowable over voltage is within 110% of rated voltage. Confirm of the equilibrium on each phase. Phase be careful of circuit voltage rise in slight load at night. If over voltage is applied to capacitor continuously, Kvar quantity is increased relative to 2 square voltage rise which results in the increase of loss and rise of temperature leading to shortening of lifetime.
2. Confirm that current of capacitor is within 130% of rated current.
3. When more than 120% of rated current flows on capacitor, phase check the current wave form with oscilloscope to know which harmonics current is the cause and install series reactor to contain harmonics.
4. The temperature of capacitor case is designed to be less than 55°C in mid summer (ambient temperature 45°C)
5. Always check the current and voltage of capacitor circuit (3phase equilibrium) Cleaning of other bushing : more than once per 6 months (according to the state of contamination). Capacity and insulation resistance : measure once a year. for measurement of insulation resistance, confirm that DC mega measurement shall be more than 1000MΩ.
6. Check the connection part of electronic switch used in capacitor circuit once a year to a minimum. If the connection is not perfect, single phase operation or harmonics agitation voltage may be applied to the capacitor and it can lead to shortening of lifetime.
7. Open the capacitor from the circuit when leading power factor in slight load at night.



SAMWHA CAPACITOR

Low Voltage Power Capacitor

DRY TYPE (CYLINDER)

DRY TYPE (UNIT)

DRY TYPE (OUTDOOR)

OIL TYPE (INDOOR)

OIL TYPE (STEEL CASE)

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