



## Film Capacitors – Power Factor Correction

### Metallized Polypropylene Film Capacitors

Series/Type : BKMJ-series  
Ordering code : BKMJxx-xx-x(eg. BKMJ0.25-15-3)  
Date : May, 2013

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### Descriptions

- ※ Dielectric: Metallized polypropylene film
- ※ Internally insulated
- ※ Dry type, high vacuum silicon oil prevention, non PCB (NPCB),  
No pollution to the environment.
- ※ Metal, special treatment.
- ※ Special composite electrical material and reinforced insulation material.



Expedited Delivery and  
outstanding Customer Service!

### Features

- ※ Indoor mounting
- ※ Three-phase, delta connected
- ※ Self-healing properties
- ※ Low dissipation factor
- ※ Long life, the spoilage is low with tiny loss of power capacity. In a relatively harsh environment, it can work normally.
- ※ With Internal high insulation discharge resistance.
- ※ Power factor improvement , save energy and saving money
- ※ Have mounting foot to convenient for installation.

### Applications

- ※ Power factor correction
- ※ Harmonic filter

### Mounting

- ※ Ground mounting

### Terminals

- ※ Excellent power capacitor terminals with cover.

### Specifications and Technical Data

<b>BKMJ Series</b>	<b>Metallized Polypropylene Film Capacitors</b>
Rated Voltage Range	From 220-1000VAC
Capacitor Connection	3 phase (1 phase on request)
Capacitor Frequency	50Hz/60 Hz
Capacitor Power Range	5- 40KVAR
Dielectric	Metalized polypropylene film with self healing

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BKMJ Series	Metallized Polypropylene Film Capacitors
Discharge Device	Internal discharge device
Discharge Resistors	Capacitors are designed to discharge the residual voltage to 75 volts or less within three(3) minutes after disconnection from the power supply in accordance to IEC60831.
Tolerance	-5%~+5%
Maximum Ambient Temperature	-25 °C~50°C (Other temperature range on request) Average temperature within 24 hours below 40°C, average temperature with a year below 30°C
Max. Relative Humidity	≤90%
Max. Altitude	≤2000m (Other altitude on request)
Over Voltage Tolerance	1.1 $V_n$ (up to 8 h daily)
	1.15 $V_n$ (up to 30 min daily)
	1.2 $V_n$ (up to 5 min 200times)
	1.3 $V_n$ (up to 1 min 200times)
Over Current Tolerance	1.3 $I_n$
Max. Inrush Current	200 $I_n$
Dielectric Loss	≤0.2 Watt / KVAR
Capacitor Loss	≤1 Watt / KVAR
Voltage Test	Between terminals: 2.15 $V_n$ for 10 seconds.
	Between terminals and case: 3000VAC for 1 minute
Safety System	Internal over pressure protection device with overload and failure protection.
Capacitor Case Material	Aluminum
Execution	Indoor, minimum distance between units : 50mm
Fixing	Two mounting feet
Mounting position	Upright
Standard	IEC60831 / GBT12747/ ISO9001:2008

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**Specification**

Three phase capacitors						
Rated voltage 250V,50Hz						
Type	Rated Voltage	Rated Capacitance	Static Capacity	Rated Current	Dimension	Terminal type
	(V)	(KVAR)	(uF)	(A)	A*B*H/a*b (mm)	
BKMJ0. 25-5-3	250	5	255	11. 5	195*72*186/179*58	D
BKMJ0. 25-10-3	250	10	510	23. 1	195*72*226/179*58	
BKMJ0. 25-15-3	250	15	764	34. 6	230*82*240/215*66	E
BKMJ0. 25-18-3	250	18	918	41. 5	230*82*240/215*66	
Rated voltage 415V,50Hz						
BKMJ0. 415-10-3	415	10	185	13. 9	179*72*186/179*58	D
BKMJ0. 415-15-3	415	15	278	20. 9	179*72*226/179*58	
BKMJ0. 415-20-3	415	20	370	27. 8	179*72*246/179*58	
BKMJ0. 415-25-3	415	25	463	34. 8	230*82*240/215*66	E
BKMJ0. 415-30-3	415	30	555	41. 7	230*82*260/215*66	
BKMJ0. 415-40-3	415	40	740	55. 6	230*82*300/215*66	
Rated voltage 450V,50Hz						
BKMJ0. 450-10-3	450	10	175	12. 8	195*72*186/179*58	D
BKMJ0. 450-15-3	450	15	236	19. 2	195*72*186/179*58	
BKMJ0. 450-20-3	450	20	314	25. 7	195*72*226/179*58	
BKMJ0. 450-25-3	450	25	393	32. 1	230*82*240/215*66	E
BKMJ0. 450-30-3	450	30	471	38. 5	230*82*240/215*66	
BKMJ0. 450-40-3	450	40	628	51. 3	230*82*300/215*66	
Rated voltage 525V,50Hz						
BKMJ0. 525-15-3	525	15	174	16. 5	195*72*226/179*58	D
BKMJ0. 525-20-3	525	20	231	22. 0	195*72*226/179*58	
BKMJ0. 525-25-3	525	25	289	27. 5	230*82*260/215*66	E
BKMJ0. 525-30-3	450	30	347	33. 0	230*82*300/215*66	
Rated voltage 690V,50Hz						
BKMJ0. 69-10-3	690	10	67	8. 4	195*72*226/179*58	D
BKMJ0. 69-15-3	690	15	101	12. 6	195*72*226/179*58	
BKMJ0. 69-20-3	690	20	134	16. 8	195*72*226/179*58	
BKMJ0. 69-30-3	690	30	201	25. 2	230*82*260/25*66	E

Special requirement can be made at the request of customers.

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**Single phase capacitors**
**Rated voltage 500V,50Hz**

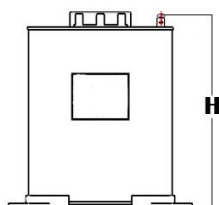
Type	Rated Voltage	Rated Capacitance	Static Capacity	Rated Current	Dimension	Terminal type
	(V)	(KVAR)	(uF)	(A)	A*B*H/a (mm)	
BKMJ0. 5-5-1	500	5	64	10. 0	175*72*186/179*58	F
BKMJ0. 5-10-1	500	10	128	20. 0	175*72*186/179*58	
BKMJ0. 5-15-1	500	15	191	30. 0	175*72*226/179*58	
BKMJ0. 5-20-1	500	20	255	40. 0	175*72*226/179*58	

**Rated voltage 1000V,50Hz**

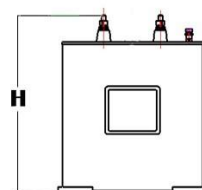
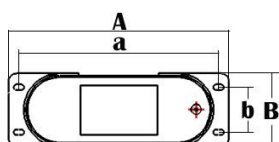
BKMJ1-5-1	1000	5	16	5. 0	195*72*186/179*58	F
BKMJ1-10-1	1000	10	32	10. 0	195*72*186/179*58	
BKMJ1-15-1	1000	15	48	15. 0	195*72*226/179*58	
BKMJ1-20-1	1000	20	64	20. 0	195*72*226/179*58	
BKMJ1-25-1	1000	25	80	25. 0	230*82*260/215*66	
BKMJ1-30-1	1000	30	96	30. 0	230*82*260/215*66	

Special requirement can be made at the request of customers.

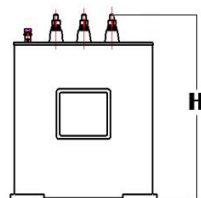
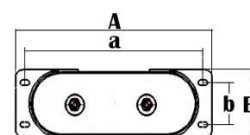
## Installation directions



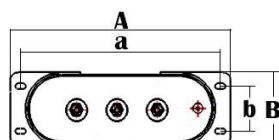
**Pattern D**



**Pattern F**



**Pattern E**



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### Production equipment

- ※ Switzerland and Taiwan winding machine
- ※ Italy Enabling Machine
- ※ Italy sealing machine
- ※ Italy spraying machine



Taiwan Winding Machine



Italy Sealing Machine



Italy Spraying Machine



Italy Enabling Machine



Switzerland Winding Machine

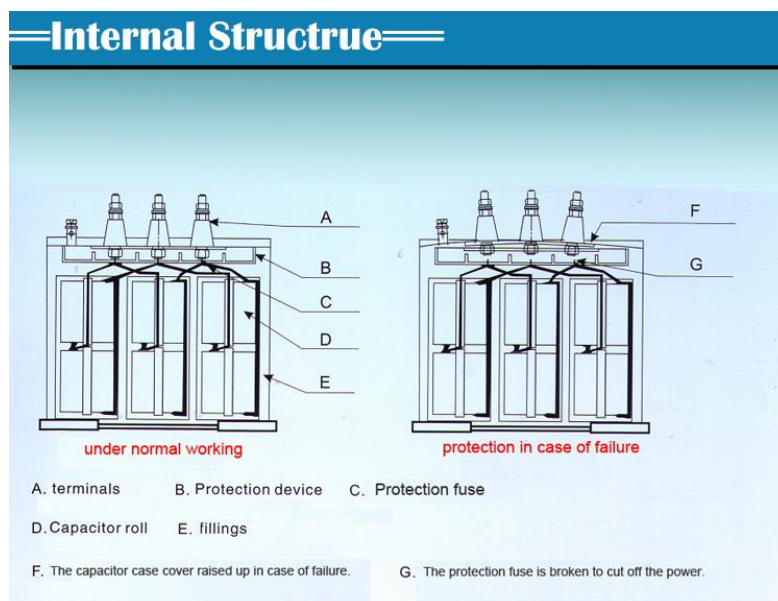
### Discharging

Each capacitor is equipped in the discharge resistor, when the capacitor disconnect from the power supply within three(3) minutes, the capacitor is discharged below 75V.

### Safety

In the event of internal failure of aging at the end of the capacitor's operational life, an increasing number of Self-healing breakdowns may cause rising pressure inside the capacitor element. To prevent it from bursting, Each capacitor element is designed with internal pressure sensitive interrupter (Protective Device). With rising Pressure the cover will bulge to disconnecting copper taps at weak points from the cover, and the current path is interrupted irreversibly to avoid the relative disaster.

### Operation of internal protective device



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**Type test**

- ※ Thermal stability test
- ※ Measurement of the tangent of the loss angle( $\tan\delta$ ) of the capacitor at elevated temperature
- ※ Measurement of the tangent( $\tan\delta$ ) of the loss angle of the capacitor
- ※ Voltage test between terminals
- ※ Voltage test between terminals and container
- ※ Capacitance measurement and capacity calculation
- ※ Test of internal discharge device
- ※ Thermal stability test
- ※ Discharge test
- ※ Self-healing test

**Precautions on the installation and operation of the capacitor**

- ※ The capacitor shall not be installed at the places exposed to rain, water, conduction dust and corrosive gas.
- ※ When more than two capacitors are installed, the distance between them shall be more than 30-50mm. Notice properly the ambient air temperature, ventilation as well as heat radiation.
- ※ The switch, protective devices and connectors shall be able to withstand continually 1.5 times of the rated current.
- ※ The automatic connecting device on the self healing capacitor shall be connected in cycle to prevent that only 1 or 2 groups of capacitors are connected repeatedly. At the same time, the delayed connection is also necessary. The delayed connection time shall not be less than 30s. It is better to be longer than 60s.
- ※ The automatic connection device shall be provided with the surge cut measures. The common method is to add proper reactor or use special contactor. No matter which method is adopted, it shall be guaranteed that the surge shall be less than 50 In when the capacitor is connected. It is better to be less than 20 In.
- ※ It is better for the automatic connecting device to be provided with over harmonic protection to prevent the harmonic damaging the capacitor. The user shall pay attention to this point.
- ※ For the self healing capacitor with manual connection, the capacitor shall not be connected repeatedly in short time. The interval between two connections shall be longer than 60s (including automatic connecting device). The total times of connection in every year shall not be more than 5000 times.
- ※ When the load is smaller at night, to prevent the capacitor withstand too high voltage from the power supply, some or all capacitors shall be removed from the circuit.
- ※ When the capacitor and the motor are in permanent connection, and the motor is disconnected from the power supply, but rotates still, the motor acts like a generator due to the self-excitation. A voltage much higher than the system voltage is produced. Such phenomenon can be prevented by selecting a capacitor with the rated current less than the no-load current of the motor (recommended in 90%). Or before disconnecting the power switch, cut off the capacitor power firstly.
- ※ We constantly strive to improve our products. Consequently, the products described in this publication may change from time to time. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still

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applicable before or when you place an order. We also reserve the right to discontinue production and delivery of products. Consequently, we cannot guarantee that all products named in this publication will always be available. The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

### Maintenance

※ Whether the current is normal

Consumers should regularly check the capacitor current of each phase, such as over-current, and check whether the voltage is over-voltage, identify the reason before put capacitors. And can prove whether the power grid have harmonic, if yes, please stop and identify the reason or contact with us.

※ Whether the temperature rise is normal

If you find that the temperature rise of an individual capacitor is too high, it should be replaced or contact with us.

If you find that the temperature rise of all capacitors is too high, you should check whether caused by improper use, and use of the environment should be improved.

※ The container have abnormal

If the container appears to have black smoke or opening, it should be replaced with new capacitors immediately.

※ Screws whether are loose

In the capacitor panel circuit, any bad contact will happen to an arc to cause high frequency oscillation and overheating of the capacitor. So that all contacts on the capacitor should be checked regularly.

※ The container whether have expansion

If you find the container have expansion, the capacitor has failed and should be replaced capacitors.

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**Wasvar** IEC ISO 9001 CQC



BKMJ

[www.wascapacitor.com](http://www.wascapacitor.com)

**Dry** Dry type

**Green** Green

**R** Resistor

**18 WARRANTY months** Warranty

**Explosion-proof** Explosion-proof

**Energy-saving** Energy-saving

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