



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, Non PCB (NPCB), No pollution to the environment.
- ※ Metal, special treatment.
- ※ Special composite electrical material and reinforced insulation material.



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Features

- ※ Indoor mounting
- ※ Three-phase, delta connected
- ※ Self-healing properties
- ※ Low dissipation factor
- ※ Independent unit structure, internal tensile explosion structure in each unit.
- ※ 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 in each unit.
- ※ Wonderful heat dissipation
- ※ Power factor improvement , save energy and saving money

Applications

- ※ Power factor correction
- ※ Harmonic filter

Mounting

- ※ Ground mounting

Terminals

- ※ Excellent power capacitor terminals

Specifications and Technical Data

BKMJ Series	Metallized Polypropylene Film Capacitors
Rated Voltage Range	From 220-1000VAC
Capacitor Connection	3 phase (1 phase on request)
Capacitor Frequency	50Hz/60 Hz
Capacitor Power Range	5- 120 KVAR
Dielectric	Metallized 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 (mm)	
BKMJ0. 25-5-3	250	5	255	11.5	272*74*320/247	A
BKMJ0. 25-10-3	250	10	510	23.1	272*74*320/247	A
BKMJ0. 25-15-3	250	15	764	34.6	345*112*310/315	A
Rated voltage 400V,50Hz						
BKMJ0. 4-20-3	400	20	398	28.9	234*128*300/219	A
BKMJ0. 4-25-3	400	25	498	36.0	234*128*300/219	A
BKMJ0. 4-30-3	400	30	597	43.3	234*128*300/219	A
BKMJ0. 4-40-3	400	40	796	57.7	386*128*310/358	A
BKMJ0. 4-50-3	400	50	995	72.2	441*130*310/413	A
Rated voltage 415V,50Hz						
BKMJ0. 415-15-3	415	15	278	20.9	250*67*285/225	A
BKMJ0. 415-25-3	415	25	462	34.8	234*128*300/219	A
BKMJ0. 415-30-3	415	30	555	41.7	345*112*310/315	A
BKMJ0. 415-40-3	415	40	739	55.6	386*128*310/358	A
BKMJ0. 415-50-3	415	50	925	69.6	441*130*310/413	A
BKMJ0. 415-75-3	415	75	1387	104.3	441*175*330/413	A
BKMJ0. 415-100-3	415	100	1849	139.1	441*193*330/413	A
Rated voltage 450V,50Hz						
BKMJ0. 45-10-3	450	10	157	12.8	252*67*240/225	A
BKMJ0. 45-20-3	450	20	314	25.7	234*128*300/219	A
BKMJ0. 45-25-3	450	25	393	32	234*128*300/219	A
BKMJ0. 45-30-3	450	30	472	38.5	234*128*300/219	A
BKMJ0. 45-40-3	450	40	629	51.3	386*128*310/358	A
BKMJ0. 45-50-3	450	50	786	64.2	386*128*310/358	A
Rated voltage 525V,50Hz						
BKMJ0. 525-10-3	525	10	115	11.0	252*67*285/225	A
BKMJ0. 525-20-3	525	20	231	22.0	234*128*300/219	A
BKMJ0. 525-25-3	525	25	289	27.5	234*128*300/219	A

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Square

Type	Rated Voltage	Rated Capacitance	Static Capacity	Rated Current	Dimension	Terminal type
	(V)	(KVAR)	(uF)	(A)	A*B*H/a (mm)	
BKMJ0. 525-30-3	525	30	346	33.0	234*128*300/219	A
BKMJ0. 525-40-3	525	40	462	44.0	386*128*310/358	A
BKMJ0. 525-50-3	525	50	577	55.0	386*128*310/358	A

Single 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 (mm)	
BKMJ0. 25-5-1	250	5	255	20.0	272*74*320/247	B
BKMJ0. 25-10-1	250	10	510	40.0	272*74*320/247	B
BKMJ0. 25-15-1	250	15	764	60.0	345*112*310/315	B

Rated voltage 400V,50Hz

BKMJ0. 4-20-1	400	20	398	50.0	234*128*300/219	B
BKMJ0. 4-25-1	400	25	498	62.5	234*128*300/219	B
BKMJ0. 4-30-1	400	30	597	75.0	234*128*300/219	B
BKMJ0. 4-40-1	400	40	796	100.0	386*128*310/358	B
BKMJ0. 4-50-1	400	50	995	125.0	441*130*310/413	B

Rated voltage 415V,50Hz

BKMJ0. 415-15-1	415	15	278	36.1	250*67*285/225	B
BKMJ0. 415-25-1	415	25	462	60.2	234*128*300/219	B
BKMJ0. 415-30-1	415	30	555	72.3	345*112*310/315	B
BKMJ0. 415-40-1	415	40	739	96.4	386*128*310/358	B
BKMJ0. 415-50-1	415	50	925	120.5	441*130*310/413	B
BKMJ0. 415-75-1	415	75	1387	180.7	441*175*330/413	B
BKMJ0. 415-100-1	415	100	1849	241.0	441*193*330/413	B

Rated voltage 450V,50Hz

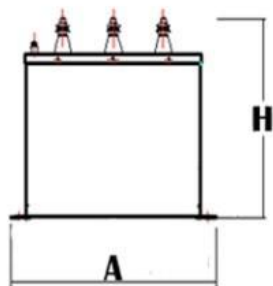
BKMJ0. 45-10-1	450	10	157	22.2	252*67*240/225	B
BKMJ0. 45-20-1	450	20	314	44.4	234*128*300/219	B
BKMJ0. 45-25-1	450	25	393	55.6	234*128*300/219	B
BKMJ0. 45-30-1	450	30	472	66.7	234*128*300/219	B
BKMJ0. 45-40-1	450	40	629	88.9	386*128*310/358	B
BKMJ0. 45-50-1	450	50	786	111.1	386*128*310/358	B

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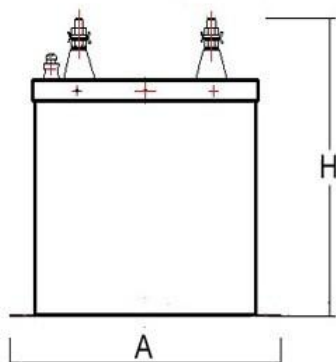
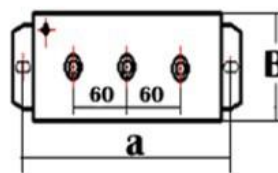
Rated voltage 525V,50Hz

Type	Rated Voltage	Rated Capacitance	Static Capacity	Rated Current	Dimension	Terminal type
	(V)	(KVAR)	(uF)	(A)	A*B*H/a (mm)	
BKMJ0. 525-10-1	525	10	115	19.0	252*67*285/225	B
BKMJ0. 525-20-1	525	20	231	38.0	234*128*300/219	B
BKMJ0. 525-25-1	525	25	289	47.6	234*128*300/219	B
BKMJ0. 525-30-1	525	30	346	57.1	234*128*300/219	B
BKMJ0. 525-40-1	525	40	462	76.2	386*128*310/358	B
BKMJ0. 525-50-1	525	50	577	95.2	386*128*310/358	B

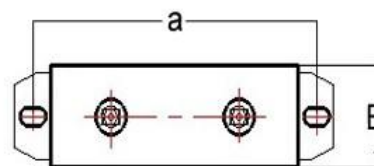
Installation directions



Pattern A



Pattern B



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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

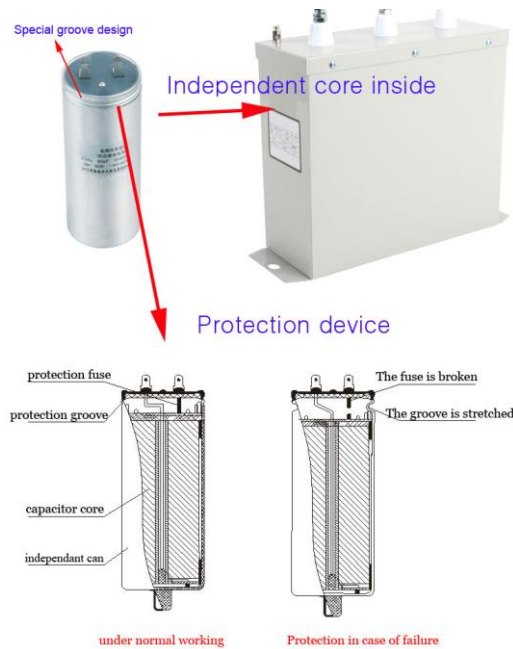
Discharging

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



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.
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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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