



Operation Manual

Guangdong WASVAR ELECTRONICS CO.,LTD

Room 701, Block 7, Tianfulai Industrial Zone No.2, Ronggui, Shunde District,
Foshan City, Guangdong Province, China 528305

TEL:86-757-28373603 FAX:86-757-28370869

Web:www.wasvar.com

BKMJ self-healing low voltage shunt power capacitor

Operation Manual

Thank you purchasing the self healing low voltage shunt electric capacitor made by our company. Please read the manual carefully before using it. It will guide you how to install and use the capacitor properly. If you have any doubt, please contact the company. The operation manual shall be provided directly to the end users.

Specification

- 1.Number of phases
- 2.Rated voltage: 415V 450V 480V 525V
- 3.Protective structure type: common series

Each capacitor of reactance series is combined with a reactor of 3 micro henry.

A discharge resistor is equipped inside the capacitor: When the capacitor is cut off, the capacitor is discharged below 75v within 60~180 seconds.

The anti-surge capacitor is equipped with a protective device. When the capacitor is at fault,the explosion protection unit cuts off the power supply automatically to prevent the fault to be deteriorated.

Maintenance:

Major points	Method of disposition
Whether temperature rise is normal	If one capacitor is too hot, replace the capacitor or contact the Company if all capacitors are too hot, the application is not proper. The operating ambient shall be improved and the causes shall be found out.
Holes on case	If there is a hole on the case, replace the capacitor immediately.
Loose screws	Any poor contact in the circuit with capacitor may produce the arc and form high frequency oscillation. The capacitor will be overhot and overstressing, therefore, it is recommended to check regularly all contact points of the capacitor devices.
Case bulging	The bulging is caused by the protective device. The causes damaging the capacitor shall be found out.
Whether each phase current is normal	Check regularly each phase current of each capacitor to see whether there is a big difference with the nominal current. If it is not abnormal, replace the capacitor or contact the company.

Technical condition:

Conforming to national standard GB/T12747-2004 and international standard IEC831-88, ISO9001(2008).

- (1) Capacitance deviation: 0%~+10%
- (2) Withstand voltage: 2.15Un/10S Between Terminals
- (3) Application environment: Indoors, with the altitude below 2000 meters
- (4) Over voltage allowable

Type	Voltage factor XUn (Rms value)	Maximal duration	Explanation
Line frequency	1.00	Continual	The max average value of the capacitance for the energized capacitor. Except for the energized period less than 24h
Line frequency	1.10	8h per 24h	System voltage adjustment and fluctuation
Line frequency	1.15	30 min per 24h	System voltage adjustment and fluctuation

Note: The capacitor service life with the overvoltage higher than 1.15 Un is calculated according to 200 times.

The first peak value of the capacitor not exceeding 1.414 multiplied by the voltage (the rms value lasts 1/2 cycle as the longest)

- (5) Rated frequency: 50Hz
- (6) Ambient air temperature:

Ambient air temperature			
Code	MAX	Daily mean temperature	Year-round average temperature
C	50	40	30

Precautions on the installation and operation of the capacitor

- (1) The capacitor shall not be installed at the places exposed to rain, water, conduction dust and corrosive gas.
- (2) 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.
- (3) The switch, protective devices and connectors shall be able to withstand continually 1.5 times of the rated current.
- (4) 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.

(5) 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.

(6) 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.

(7) 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.

(8) 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.

(9) 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.