

JKW5C


Intelligent Reactive Power
Auto-compensation Controller

OPERATION INSTRUCTION

Standard: **JB/T 9663-2013**

CNC

Deliver
Power For Better Life

-  Before installing and using this product, please read this manual carefully and pay more attention to safety.

1. Security warning

Carry out the installation, wiring and debugging of the product in accordance with the methods and steps specified in this manual, and pay attention to the wiring diagram and terminal diagram label at the back of the controller.

When the controller shell has obvious damage or display function failure, do not continue to install and use, please contact with the product supplier.

The installation of the controller must comply with all relevant safety operating procedures, and correct wiring and wire dimensions must be adopted to ensure safe operation, reliability of operation and accuracy of measurement.

Both the power input and the secondary side of CT will produce high voltage which will endanger personal safety. Please be careful during operation and strictly abide by the safe operation rules of electricity use.

Only professionals can put the equipment into use according to the instructions and safety specifications.

2. Brief introduction of product

Full digital design, AC sampling;

Adhering to the people-oriented design concept, modular assembly and appearance streamline design;

Real-time display of power factor, voltage, current, reactive power and capacitor switching state;

English prompt and digital input for setting parameters;

Capacitor control scheme supports power factor cyclic switching compensation or precise compensation of reactive power. The compensation scheme can be set through menu operation;

It has two working modes: manual compensation and automatic compensation;

Sampling physical quantity is power factor or reactive power.

3. Technical parameter

Altitude: $\leq 2500\text{m}$ Ambient temperature: $-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$

Storage temperature: $-40^{\circ}\text{C} \sim +70^{\circ}\text{C}$, Environmental condition: without explosive and flammable dangerous medium, without corrosive metal gas and the conductive dust that may damage the electric insulation. The installation site has no violent vibration and no rain or snow erosion.

Measuring data: Measuring voltage: $100\text{V} \sim 500\text{V}$
 Measuring current: $0 \sim 6000\text{A}$ (primary current)
 Sensitivity: 50mA (Secondary current)
 Measuring power factor: lag $0.2 \sim$ lead 0.2

Rated voltage: $380\text{V} \pm 20\%$

Measuring frequency: $47\text{Hz} \sim 53\text{Hz}$

Active power: $0 \sim 6553\text{Kw}$ reactive power: $0 \sim 6553\text{Kvar}$

Input/output signal:

sampling voltage: phase B, C voltage

sampling current: phase A current;

secondary current of CT: $0 \sim 5\text{A}$ control output: relay dry junction point $5\text{A}/250\text{V}$ resistance (static), $12\text{V } 30\text{mA}/$ branch (dynamic)

Sampling voltage and sampling current of the compensation controller must be out of phase.

Display performance:

LED digital display, data display refresh period $\leq 1\text{s}$

Measuring accuracy:

voltage: $\pm 0.5\%$ active power: $\pm 1.0\%$ current: $\pm 0.5\%$

reactive power: $\pm 1.0\%$ power factor: $\pm 1.0\%$

Setting data:

A. CT transformation ratio: 1 ~ 990 (ratio)

B. Target power factor when the CT ratio is 1: ≤ 0.99

Target reactive power when the CT ratio is greater than 1: $\leq 99\text{kvar}$

C. Input delay: 5-300s

D. Resection delay : 30-300s

E. Over-voltage setting: 50V ~ 500V

F. Under-voltage setting: 50V ~ 500V

H. Number of capacitor circuits: 1-12

Capacity design of circuit 1-12: 0-80kvar

4. Display interface and parameter setting



From left to right, it is “Menu” key, “▲” increment key and “▼” decrease key. Under running state, click the “▲” and “▼” keys to switch display power factor, voltage, current and reactive power. Long press “Menu” to enter setting parameters. Long press the “▼” key to enter manual operation.

Long press “Menu” key to enter the setting state, and then click “Menu” to enter the next parameter, click “▲” or “▼” to modify the parameter, and click “Menu” to save and enter the next parameter .

Note: when CT transformation ratio is set to 1, it is power factor mode. When the power factor is less than the target power factor, the controller will be put into operation. When the power factor is negative, the controller will be cut out operation.

No need set the capacitance voltage and capacitance under power factor mode .

When CT transformation ratio is not set to 1, it is reactive power mode. Only when the current reactive power is greater than the target reactive power, the input operation will be carried out. In addition, when each group of capacitors is put in, it will judge whether the current capacitor capacity will be overcompensated and choose a smaller capacitor, so as to achieve accurate compensation effect.

Manual operation

Long press the “▼” key to enter the manual state, and then click the “▲” and “▼” keys to input or cut out the capacitor.

Indicators

The four indicators under the digital tube are in four states: “Set up”, “Pre-cut”, “Warning” and “Manual” .

“Set up” indicator is on when enters the Settings state.

“Pre-cut” indicator is on when the controller is about to carry out put into or cut out operation, and the “Pre-cut” indicator will be off when put into or cut out operation is performed after delay time.

“Warning” indicator is on when the controller detects fault of “over-voltage”, “under-voltage”, “zero current”, at the same time the controller does not perform any put into or cut out operation.

“Manual” indicator is on when it is manual mode. At the same time, the user can press the “▲” and “▼” keys to perform put into or cut out operation.

Parameter setting

Code	Definition	Default value	Setting range
A	CT transformation ratio	A. 1	1-990
b	Target threshold	B. 0.93	0.70-0.99/1-99kvar
c	Input delay	c. 30	5-300
d	Resection delay	d. 30	30-300
E	Over-voltage threshold	E. 450	50-500
F	Under-voltage threshold	F. 350	50-500
g	Capacitor voltage class	g. 450	50-450
H	Number of capacitor circuits	H. 12	1-12
1	Capacity design of circuit 1	1. 20	0-80
2	Capacity design of circuit 2	2. 20	0-80
3	Capacity design of circuit 3	3. 20	0-80
4	Capacity design of circuit 4	4. 20	0-80
5	Capacity design of circuit 5	5. 20	0-80
6	Capacity design of circuit 6	6. 20	0-80
7	Capacity design of circuit 7	7. 20	0-80
8	Capacity design of circuit 8	8. 20	0-80
9	Capacity design of circuit 9	9. 20	0-80
10	Capacity design of circuit 10	10. 20	0-80
11	Capacity design of circuit 11	11. 20	0-80
12	Capacity design of circuit 12	12. 20	0-80

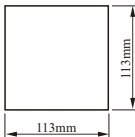
Alarm protection Instructions

Over-voltage protection: The voltage detected by the controller is higher than the over-voltage threshold;

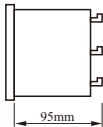
Under-voltage protection; The voltage detected by the controller is lower than the under-voltage threshold;

Zero current protection: the current detected by the controller is lower than the factory preset current sensitivity (60mA); Or the current power factor is lower than 0.1.

5. Installation

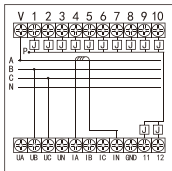


Hole size:113mm x113mm

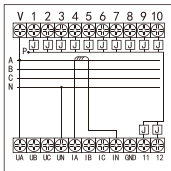


Insert depth:95mm

6. Wiring diagram



JKW5C-380V
voltage sampling wiring diagram



JKW5C-220V
voltage sampling wiring diagram

If the contactor is 380V AC, point P is connected to phase B or C; If the contactor is 220V AC, point P is connected to the neutral line.

If use the compound switch, point V is the common terminal of 12V, and is connected to common terminal of the compound switch.

The 1-12 circuits are connected to the control terminals of the compound switch.

Wiring notes:

When it is AC380V sampling voltage, current sampling must be out of phase current.

If the voltage of phase B and C is taken, the current of phase A is taken; if the voltage of phase A and C is taken, the current of phase B is taken. When it is AC220V sampling voltage, current sampling must be in-phase current. If take A phase voltage, take A phase current, if take B phase voltage, take B phase current.

Note:

When ordering, the sampling voltage level, static or dynamic control mode should be noted.

Static: AC contactor.

Dynamic: compound switch, contact-less switch.

7. Attached Accessories, Maintenance and Precautions

7.1 Attached Accessories

The attached accessories of this device include installation screw and fixed bolt, operation manual and factory certificate. Please check after unpacking. If there is any discrepancy, please contact with the manufacturer.

7.2 Transportation and storage

(1) Transportation and loading and unloading should not be subjected to violent vibration;

(2) The ambient temperature of storage is -25°C - 70°C , the relative humidity is not more than 95%, and there is no corrosive gas in the air.

7.3 Maintenance

During the running of the device, it is necessary to observe the working status indicator and switching indicator regularly. If there is any abnormal situation, please stop the machine immediately for inspection, or contact with the manufacturer.

7.4 Precautions

- (1) This device is strictly prohibited to be operated by non-electricians.
- (2) The grid voltage should be measured before installation and use, in strict accordance with the requirements of power management regulations.
- (3) Before maintenance, the power must be cut off first until the capacitor discharge is completed.



CERTIFICATE

Product Model: JKW5C

Standard : JB/T 9663-2013

Inspector : CNC 001

Production date: Printed on the product
or package.

This product is qualified according
to the delivery inspection

CNC

JKW5C series

CNC ELECTRIC

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