Senci power

Transformer

Operating instructions

Shanghai Sencipower Technology Co., Ltd.

1. Summary

JMB, BK, JBK, BKC series control transformers are type of earliest electric products developed by the Company, which adopt import material and strict design, and have characters of excellent performance, dependable work, and wide applicability. This series transformer adopts assembling method of vertical lathe, which can work continuously under condition of rated capacity for longtime and be widely used as control power supply of general electric appliance in machine slice and mechanical equipment, as well as power supply of indicator light used for local illumination.

2. Specification and installation dimension:

Series	Specs (VA)	Rated input voltage (V)	Rated output voltage (V)	External dimensions L*W*H (mm)	Installation dimensions L*W (mm)
JBK	40	220 (361) 380		80×77×90	55×50
	63			80×85×90	55×50
	100		6	86×95×92	64×70
	160		(6.3)	98×105×110	83×87
	250		12	98×110×113	82×87
	400		24	120×115×120	102×90
	630		36	150×1110×140	128×92
	1000		110	180×220×155	155×160
	1600			57×82×82	155×182
BKC	25	(399)	127 220 (380)	70×89×100	68
	50			80×100×105	50×70
	100			86×100×125	57×83
	150			105×100×136	56×84
	250				78×83

	BK series		JMB series
Specification	External dimensions	Installation dimensions	External dimensions
25VA	79×72×86	54×47	150×160×130
50 VA	87×68×96	70×57	
100 VA	105×94×110	84×68	
150 VA	105×100×110	84×74	160×170×135
200 VA	105×108×110	84×84	
250 VA	120×116×134	95×80	130×210×155
300 VA	120×126×134	95×90	
400 VA	134×137×150	110×100	210×230×175
500 VA	134×150×150	110×110	
700 VA	155×155×164	125×114	218×290×185
1000 VA	155×170×164	125×128	
1500 VA	175×185×195	143×130	260×330×235
2000 VA	175×200×195	143×140	
3000 VA	205×220×230	170×160	280×350×230
4000 VA	230×210×340	190×155	360×355×280
5000 VA	310×27×28	200×140	

3. Operating condition:

The transformer could operate unfailingly under following condition.

3.1. Sea level altitude is lower than 2500M

3.2. Air temperature: not higher than 40ºC, and not lower than -25 ºC

3.3. Relative humidity: monthly average humidity is 90%.

3.4. A medium of no explosion hazard in where no air might corrode metal and destroy insulation, or no conductive dust existing.

3.5. A place of no weather effect.

4. Installation and use instruction

4.1. Unfold packing case, take out instruction, spare parts and the unit, and read

"Operating instruction" carefully to ensure correct operation.

4.2. Fasten the transformer firmly on suitable place of airiness and heat emission to prevent it from vibration or corrosion.

4.3. Please test if circuitry voltage and mains voltage is rated input voltage before use it. The allowable deviation is ±5%. Please add a regulated power supply on front terminal to ensure reliable operation of transformer if the tested voltage exceeds allowable range consumedly.

4.4. Select lead of proper cross section and connect it according to indication, make contact after confirmed that load sharing is inerrant. For selection of cross section of lead under different conditions, please refer to following sheet:

Rated input/output current (A)	Cross section of lead (copper) (mm^2)
5	0.75
5-10	1.00
10-16	1.50
16-25	2.50
25-32	4.00
32-45	6.00
45-63	10.00
63-80	16.00
80-110	25.00
110-130	35.00
130-170	50.00
170-220	70.00
220-270	95.00

Calculating formula of rated current:

Current=Rated capability (VA)/rated output (input) voltage (V) *A

5. Precautions

5.1. Before purchase, please estimate total capacitance of applicable electric appliance, and choose transformer that has equivalent capacitance to prevent transformer from burning of instantaneous startup.

5.2. The transformer is designed and produced strictly according to relevant

national standard. When using duplex winding and multi-control voltage (tap style), such as BK, JMB transformer please respectively reduce capability according to max voltage radio of primary and secondary voltage, namely, current may not exceed calculated value of max voltage; For transformer that adopts winding to divide power capacity, it is necessary to control power capacity of each winding strictly to prevent transformer from burning. For configuration and character of winding, please refer to figure 1.

5.3. Before installation, please check if all data listed on nameplate meet your requirement, and perform installation after confirmation.

5.4. After electrified, radiation (the temperature should not exceed 80℃) with iron core and coil of transformer is normal. If the temperature exceed 80℃, or condition of smoking occurs, please shut off power, check capacitance of electric appliance, and adjust it.

6. After sale service

6.1. Guarantee period of control transformer and street lamp transformer produced by the Company will be one year that enters into force from date of purchases. In guarantee period, for problems caused in manufacturing quality, user could achieve maintenance from maintenance service (agency) with credence of sales invoice or warranty card, or contact the Company.

7. Packing list

7.1. The unit, 1

7.2. User’s manual, 1

7.3. Warranty card, 1

7.4. Acceptance certificate, 1

8. Note:

The company could design and manufacture products in commission of user according to the special requirement.

Configuration and character of control transformer winding

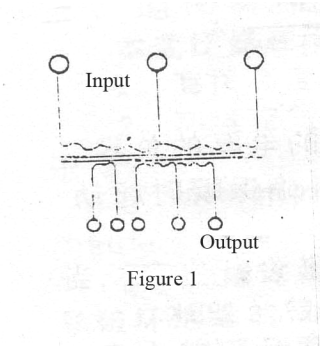

Figure 1

Character of duplex winding tap style is shown as figure 1. Primary and secondary winding of transformer respectively change voltage value with lead tap of the same specification, set high-pressure level as rated value, reduce capability according to dropping radio of voltage. In case that use two kinds of voltage at output terminal synchronously, the current valued should not be exceeded (Current is rated value.)

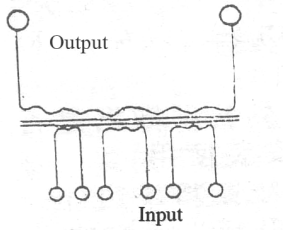

Figure 2

Character of multi windings of fractional power is shown as figure 2. There is one winding at primary winding, and various windings at negative pole that loads separately, hereby, each winding should not exceed specified value.

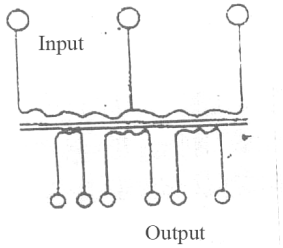

Figure 3

Character of composite winding of fractional power is shown as figure 3. It has these two characters abovementioned, in case that change 380V of primary level to 220V, transformer capacitance should be 0.578 time of original value, current of output winding should not exceed 0.578 time of original value.

1. Scope

1.1. The Product Instruction summarizes basic configuration, basic parameter, normal operating condition, and precautions of SG, SBK (ZSG) series three-phase dry type (rectifier) transformer, and may be used as instruction for type selection, safe operation of user.

2. Sources of standards

2.1. The first part of GB1094.1-1996 power transformer

2.2. JB/T9646-1999Small scale dry type control or lighting transformer

2.3. JB/T9639-1999Enclosed bus

3. General description of production

3.1. Transformer is kind of stationary electrical equipment that switches voltage or current between two or more windings with congruence frequency via electrodynamic induction.

3.2. For SG, SBK series three-phase dry type (rectifier) transformer, the unit body consists of iron core and winding should not be dipped into medium of insulating liquid (transformer oil), while directly contacts with air, and emit heat via air convection.

3.3. ZSG series three-phase dry type rectifier transformer (dry type transformer) is important component of transformer equipments; it combines with various rectifier equipments to rectifier circuit system. For realization of switching AC to DC, rectifier transformer switches voltage alternating current network to equivalent voltage value, then output voltage to DC dragging equipment via rectifying device (rectifier).

4. Configuration introduction

4.1. For configuration type, please refer to figure1 and figure2.

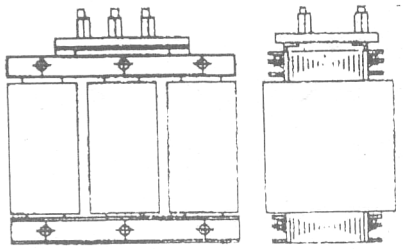

Figure 1

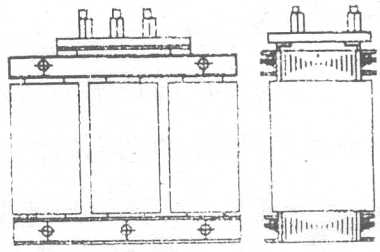

Figure 2

4.2. Adopt three pillar iron core that made of cold rolled silicon steel plate, flux density ≥ 12000 gauss

4.3. According to capability, the winding will adopt SBECR double fiberglass packed flat copper wire, QZ high strength enameled wire or copper bar.

4.4. Insulation level: level B

5. Basic parameter

5.1. Apply to circuit below 50HZ 1000V

5.2. Rated working system: short term working system and long term working system.

5.3. Major capability, please refer to Sheet 1

SN	Specification and capability	SN	Specification and capability
1	SG/1SBK-300VA	14	SG/1SBK-8000 VA
2	SG/1SBK-500 VA	15	SG/1SBK-10KVA
3	SG/1SBK-750 VA	16	SG/1SBK-15 KVA
4	SG/1SBK-1000 VA	17	SG/1SBK-20 KVA
5	SG/1SBK-1500 VA	18	SG/1SBK-25 KVA
6	SG/1SBK-2000 VA	19	SG/1SBK-30 KVA
7	SG/1SBK-2500 VA	20	SG/1SBK-40 KVA
8	SG/1SBK-3000 VA	21	SG/1SBK-50 KVA
9	SG/1SBK-3500 VA	22	SG/1SBK-60 KVA
10	SG/1SBK-4000 VA	23	SG/1SBK-100 KVA
11	SG/1SBK-5000 VA	24	SG/1SBK-150 KVA
12	SG/1SBK-6000 VA	25	SG/1SBK-200 KVA
13	SG/1SBK-7000 VA	26	SG/1SBK-300 KVA

5.4. Please select combination of rated power voltage and rated output voltage according to Sheet 2 preferentially.Sheet 2

Rated power voltage	Rated output voltage
660 380 220 127	380 220 127 110 36 24 12 6

6. Normal operating condition

The transformer could operate unfailingly in following conditions:

6.1. Sea level altitude is lower than 2500M

6.2. Medium temperature:

6.2.1. Not lower than -25 ºC

6.2.2. Not higher than 40ºC

6.3. Relative humidity: monthly average humidity is 90% while monthly average temperature is +25 ºC

6.4. 6.4 Waveform of current and voltage is border on sine wave

6.5. 6.5 A place of no weather effect

6.6. 6.6 A place of no obvious shake or impact vibration.

6.7. 6.7 A medium of no explosion hazard in where no air might corrode metal and destroy insulation, or no conductive dust existing.

7. Precautions

7.1. Confirm reasonable capability of transformer

Firstly, it is necessary to check local power voltage, factual load of user and local condition, then select transformer according to technology data on nameplate of transformer. In general, it is necessary to select transformer according to capability, voltage, current and environmental condition of transformer synthetically. Therein, selection of capability should be conducted according to capability, character and using term of consumer.

In normal operation, it is necessary to keep electric load supported by transformer in a level of 75-95% rated capability of transformer.

7.2. Do not operate in condition of overload for long term

Overload operation denotes that operating current of transformer exceeds current valued regulated on nameplate, which should raise temperature of transformer, expedite insulation aging, and reduce operating life, hereby, do not operate transformer in condition of overload. Under special condition, transformer could operate under condition of overload in short time, for allowable time, please refer to sheet 3

Sheet 3

SN	Times of rated load	Allowable time of overload
1	1.30	1 hour
2	1.60	15 minutes
3	1.75	8 minutes
4	2.00	4 minutes

7.3. No wetting

For all electrical products, wetting will reduce insulation, increase leaking current, and even neutralize the product. SG, SBK, ZSG three-phase transformer is a kind of indoor transformer, which can not be assembled out door or suffered from water logging, raining, and weather corrosion. Please perform drying treatment with wetting transformer.

7.4. For ensuring normal operation of transformer, it is necessary to conduct following test frequently.

7.4.1. Temperature test: temperature is important for normal operation of

transformer.

7.4.2. Load test: For improve availability of transformer, it is necessary to reduce energy loss, avoid of overload operation as much as possible, as well as test actual load capability during operation. The test could be conducted directly with pliers meter. The current value should be 75-90% rated current of transformer. If the value is exceeded, it denotes that the transformer is operating with overload, and adjustment is necessary.

7.4.3. Voltage test: variable quantity of voltage of transformer should be in range of ±5% of rated voltage. It is necessary to adjust voltage by using current tap to make voltage achieve regulated range. In general, it is possible test secondary voltage by using voltmeter.

7.4.4. Test of insulation resistance: for ensuring normal operation of transformer, it is necessary to test insulation resistance of transformer to prevent insulation from wetting, or avoid accident. It is required to perform test with insulation resistance via megohm meter in condition of breaking, and tested resistance should not lower than value tested before.

8. After sale service

Guarantee period of control transformer produced by the Company will be one year that enters into force from date of purchases. In guarantee period, for problems caused in manufacturing quality, user could achieve maintenance from maintenance service (agency) with credence of sales invoice or warranty card.

9. Order precautions

Please indicate following items while purchasing products:

9.1. Type, specification, capability, quantity of transformer;

9.2. Primary, secondary voltage of transformer;

9.3. Connecting level

9.4. Provide capability distribution while providing voltage of multiwinding transformer;

9.5. Please indicate specially during ordering if special requirement with external dimensions or installation dimension is required.

7×24h Service hotline:021-61994089

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