



HZXB (L) -200kVA/50kV

Induction Series Resonance Test System

Technical Solution

China Baoding



HZXB (L) -200kVA/50kV

Induction Series Resonance Test System

I. Testing object

AC withstand voltage test of 22kV/600MW thermal power generator, capacity $\leq 0.2158\mu\text{F}$, test frequency 50Hz, test voltage 47kV, test time 1min

II. Main technical parameters and functions

1. Rated capacity: 200kVA;
2. Rated voltage: 50kV;
3. Rated current: 4A;
4. Operating frequency: power frequency 50Hz;
5. Output voltage waveform distortion rate: $\leq 0.5\%$;
6. Allow continuous working hours: 5min(under rated load);
7. Temperature rise after continuous operation for 5min under rated load: $\leq 65\text{K}$;
8. Device's own quality factor: $Q \geq 10$;
9. System measuring accuracy: virtual value 1.5 class;
10. Output power: single 220V, 50Hz;
11. Over current, over pressure and flashover protection are provided for the testing object;



12. Environment temperature: $-10^{\circ}\text{C} - 50^{\circ}\text{C}$

13. Relative humidity: $\leq 90\% \text{RH}$, Altitude $\leq 1000\text{m}$;

III. Standards

GB10229-88	“Electric reactor TSCR”
GB1094	“Power transformer”
GB50150-2006	“ Electrical equipment installation engineering electrical equipment handover test standard”
DL/T 596-1996	“ Electrical equipment preventive test procedures”
GB1094.1-GB1094.6-96	“Enclosure protection class”
GB2900	“Electrotechnical terminology”
GB/T16927.1~2-1997	“High voltage test technique”

IV. Testing power and L 、 C_x

Testing object capacity range	Adjustable range of reactor
0.08~0.2158uF	47H~127H

Comment: C_x is the capacity of testing object

Ac power frequency withstand test: The series resonance test device is used for the ac voltage withstand test of generator.



V. System configuration and parameters

1. Excitation transformer JLB-20kVA/5kV/0.4kV 1 set

- a)** Rated capacity: 20kVA;
- b)** Input power: 220V, single phase;
- c)** Output voltage: 3kV
- d)** Type: Dry type
- e)** Weight: about 125kg;
- f)** Temperature rise of coil to air after
- g)** 1 min rated operation: $\leq 65K$;

2. Operating bench HZXB- (L) -20kVA/380V (Including voltage regulator) 1 Set

- a)** Rated capacity: 20kVA;
- b)** Input voltage: 380V
- c)** Output voltage: 0~250V;
- d)** Protection function: zero, overcurrent, overvoltage and flashover protection;
- e)** Weight: about 100kg;





3. Adjustable reactor DK (L) -200kVA/50kV 1 Set

- a) Rated capacity: 200KVA;
- b) Rated voltage: 50kV;
- c) Rated current: 4A;
- d) Adjustable inductance: **47H~127H**;
- e) quality factor: $Q \geq 10$;
- f) Type: Dry type, adjustable with iron core; ;
- g) Quantity: 1 set;
- h) Weight: about 180Kg ;



4. High voltage divider FRC-50kV 1 Set

- a) Rated voltage: 50kV
- b) Testing accuracy: AC RMS 1.5 class;
- c) Dielectric loss: $\operatorname{tg} \sigma \leq 0.5\%$;
- d) The ratio of divided voltage: 1000: 1, accuracy: $\leq 1.0\%$;
- e) Weight: about 10Kg;

5. Compensating capacitor BC-50kV/0.08uF 1 Set

- a) Rated voltage: 50kV;
- b) High voltage capacity: 0.08uF
- c) Weight: 15kg



VI. System equipments List

List of equipment configuration

No.	Name	Model	Unit	quantity	Comment
1	Excitation transformer	JLB-20kVA/5kV/0.4kV	set	1	
2	Control Bench	HZXB- (L) -20kVA/380V	set	1	
3	Adjustable reactor	DK- (L) -200kVA/50kV	set	1	
4	Divider	FRC-50kV	set	1	
5	compensating capacitor	BC-50kV/0.08uF	set	1	
6	Testing Line		set	1	

VII. main features and functions

1. Counterattack overvoltage and transmission overvoltage protection: this device adopts proper connection mode, perfect protective link and progressive absorption of energy to prevent the infringement of counterattack overvoltage and transmission overvoltage. It has been proved by many years of field practice that when the test product is flashover or breakdown, complete test equipment and field test personnel can be avoided from being damaged and threatened by overvoltage. At the



same time, it can also avoid the failure point of the tested product not to expand the damage after flashover or breakdown.

2. Small size, light weight, convenient installation and handling, simple wiring, very suitable for field users

In the operation.

3. The main functions of the resonance device include:

(1) direct reading function of core gap of reactor:

The device has a gap observation hole on the reactor, which can read the gap of the core directly to guide the operation.

(2) pressure-resistant time to automatic depressurization function:

The pressure-resistant timing is done with a digital display timer. And when the time to withstand voltage is reached, the system will automatically reduce pressure

(3) function of zero position closing and zero lift:

It has the function of zero limit. If the voltage regulator is not at zero, the high-voltage output button cannot be closed to ensure the system is boosted from zero.

(4) overcurrent protection:

The system is equipped with electromagnetic over-current relay, which has strong anti-interference ability and quick action, so as to avoid the test products from being damaged by the current.

(5) overvoltage and flashover protection function of tested product:



This device is installed with electronic over-voltage flashover protective plate to avoid the test product from over-voltage and flashover damage, and quick action.

(6) real-time monitoring function of test data:

The voltage current on the high-voltage side and the voltage current on the low-voltage side can be monitored and the test situation can be more intuitively understood.



VIII.After sale service

- 1) upon the arrival of the equipment, the supplier shall be responsible for technical support services for the related technical personnel of the equipment, in accordance with the provisions on debugging related matters in the contract between the supplier and the supplier.
- 2) the supplier shall guarantee the equipment for one year from the date of delivery. During the warranty period, the supplier shall be responsible for the free inspection and replacement of parts and components of the product (the equipment subject, excluding the easy-to-use accessories such as wiring, etc.).
- 3) the supplier shall provide lifelong maintenance if the warranty period exceeds one year. Above one year, within three years, the supplier is free of maintenance time fee and only charge maintenance cost. At least 3 years will be charged according to the normal procedure (maintenance time fee, material fee, and additional).
- 4) implement all-weather technical response service, and provide technical solutions within 8 hours after receiving calls or faxes about problems in the use of the products.
- 5) if the equipment is damaged or cannot be used due to improper operation or force majeure, it is not covered by this warranty.

