

HZ5372

Primary Current Injection Tester



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Safety Precautions



(1) For the safety of the operator and the instrument, ensure that the instrument is well grounded.



(2) Connect the ground wire first when preparing for the test, and remove the ground wire last when the work is completed.



(3) The power supply connected to the instrument must be able to withstand 30A current impact.



(4) When connecting the instrument to the test product, pay attention to check whether each wiring is wrong, so as to avoid damage to the equipment due to incorrect wiring.



(5) The maximum current value of the set overcurrent protection should not exceed the rated output current value of the instrument.



(6) Do not plug or unplug any wiring when the power is on.

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I. Overview

1. Purpose

HZ5372 high current generator (referred to as the current booster) is a test equipment developed by our company. It combines the advantages of similar products at home and abroad. It adopts numerical control technology and has strong anti-interference ability. Compared with the previous generation of current booster, Due to the use of low-power, large-capacity, self-coupling voltage regulators and high-permeability iron cores, the converter has the advantages of large output power, small size, and light weight. It is mainly used for primary bus protection and various current transformer transformation ratio test items. It is widely used in the scientific research, production and electrical test sites of electric power, railway, petrochemical, metallurgy and mining enterprises.

2. Performance characteristics

- ◆Use beautiful and generous PVC panel
- ◆The operation time of the test equipment can be synchronized
- ◆Automatic recognition of normally open and normally closed contacts
- ◆Several calibrations can be connected in series at the same time to improve work efficiency
- ◆Directly display the test values of primary current and secondary current, which is convenient for test observation and recording.
- ◆High measurement accuracy 0.5 level
- ◆High power, small size, strong load capacity

Small size and light weight, the volume is only 30% to 70% of similar products, and it is very convenient to carry.

3. Operational aspects

- (1) After the wiring is completed, check it again to see if there is a wiring error and whether the connector is in good contact.
- (2) During the test, if there is any abnormal phenomenon such as sparking or no display when starting up, turn off the power immediately and recheck the wiring.

(3) During actual wiring, the current output terminal should form a loop, otherwise the instrument will not output current.

(4) The current booster comes with random output wires; the output external copper wire is selected according to 10A/mm². (The standard configuration is two 3m test leads)

(5) The capacity of the equipment is designed for short-time work of 5 minutes. If used for batch test, the working time should be less than 2.5 minutes, wait for 10 minutes before proceeding to the next work. Such as temperature rise (30 minutes-24 hours) should be prepared according to long-term working temperature rise.

II. Technical Features

1. Name and Classification

(1) Name: HZ5372 high current generator.

(2) Environmental group: it belongs to the III group of instruments (that can be used in outdoor environment) in GB6587.1-86 "General Outline of Environmental Test of Electronic Measuring Instruments".

2.1 Input voltage: AC220V $\pm$ 10%

2.2 Power: 5KVA

2.3 Output current: Series: AC0 $\sim$ 1000A Parallel: AC00 $\sim$ 2000A stepless adjustable, panel with digital display ammeter

2.4 Output voltage: (>10V)

2.5 Output Waveform: The output current is a standard sine wave with tiny burrs, which is better than the power system requirements and standards, and the ripple coefficient is less than 0.3%. Standard sine wave.

2.6 Measurement accuracy: (using 0.2S grade material) is actually around 0.3; each current can be smoothly and continuously adjustable, and the accuracy is higher than 0.5. The current and voltmeter display is a true effective value, with high accuracy and high stability.

2.7 Output current mode: the true effective value is continuously adjustable;

2.8 Current stability: 0.2%

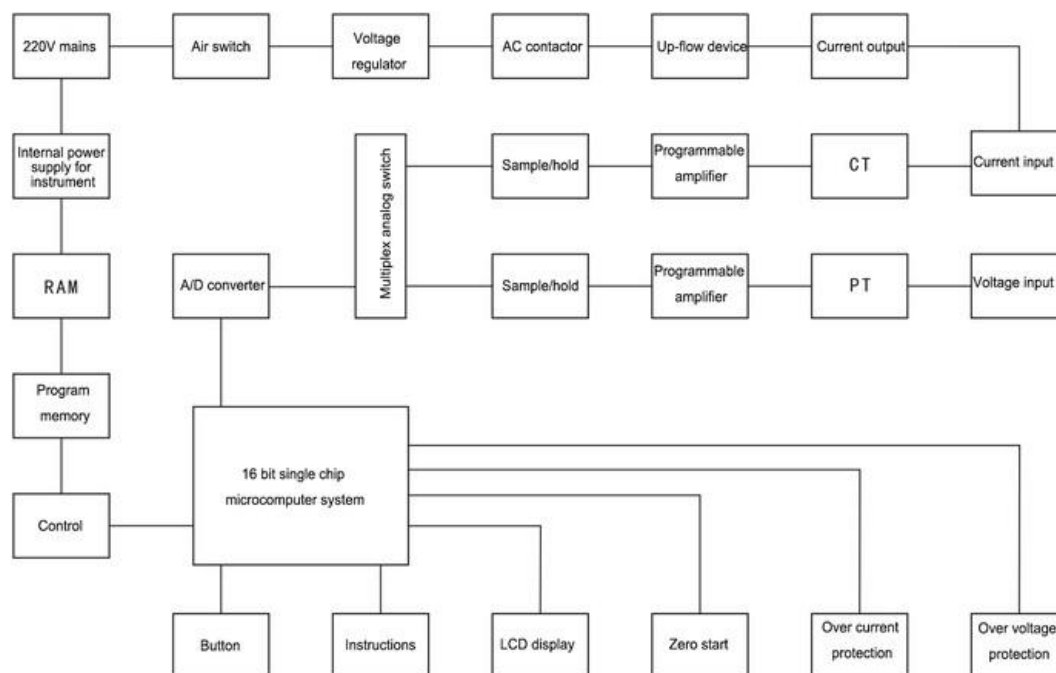
2.9 Structure: One

2.10 Wiring mode: as required

2.11 Protection settings: overcurrent, overvoltage

III.Working principle

1. Functional block diagram



2. Working principle

The instrument measurement circuit includes a current measurement circuit and a current measurement circuit. (Voltage test can be added as required) The volt-ampere characteristic function can be expanded.

The current measurement loop includes micro-current zero-impedance CT, programmable amplifying circuit and sampling circuit.

The voltage measurement circuit includes a PT isolation signal acquisition circuit, a programmable amplifier circuit and a sampling circuit.

The 16-bit single-chip microcomputer uses computer digital real-time acquisition method, by measuring the voltage signal amplitude, according to the voltage proportional relationship, the high-voltage measured voltage value can be calculated, and the automatic timing function can be realized by comparing the measured voltage signal amplitude with the set voltage value. According to the current proportional relationship, the

output current of the device can be calculated, and the overcurrent protection function can be realized by comparing the amplitude of the measured current/voltage signal with the set value.

IV. Basic operation

1) Detection of transformation ratio

1. Before connecting the power cord, first adjust the "current adjustment" handle counterclockwise to the zero position. Connect the current output terminal to the primary side of the current transformer under test, and connect it to the ammeter of the device on the secondary side of the current transformer under test.

2. After the power is turned on, turn on the power switch of the instrument and set the "Power Control" switch to the "ON" position, and the power indicator will light. Move the selector switch to the required gear (series or parallel gear), and then turn the "current adjustment" handle clockwise to call out the required output current, and then the characteristic test of the device under test can be performed (the primary ammeter shows the primary current at this time The secondary current meter displays the secondary current at this time, and the transformation ratio of the transformer under test can be calculated according to the primary and secondary current values). If the selector switch is switched to the series gear, L2 and L3 should be short-circuited, and the output terminals are L1 and L4. Output current is 1000A

If the selector switch is selected in parallel mode, L1 and L2 should be short-circuited, L3 and L4 should be short-circuited. The output terminals are L1 and L3 or L2 and L4, and the output current is 2000A.

3. When doing the impact test, you need to adjust the required current first, press the "impact" switch to power off the equipment, and let go of the power supply, then you can perform the impact test on the tested equipment.

V. Transportation and maintenance

1. Transportation

This product must be packaged during transportation. The packaging box should be wooden, and the packaging box should be lined with a shock-proof layer such as foam.

The packaged product should be able to be transported by road, rail, and air. During transportation, it should not be placed in open-air carts, and the warehouse should be protected from rain, dust, and mechanical damage.

2.Storage

The instrument should be stored in an ambient temperature of $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$, relative humidity no more than 85%, ventilated room without corrosive gas. It should not be placed close to the ground and walls.

3. Moisture-proof

In humid climate areas or humid seasons, if the instrument is not used for a long time, it is required to turn on the power once a month (about two hours) to allow moisture to escape and protect electronic components.

4.Anti-exposure

When the instrument is used outdoors, try to avoid or reduce the direct exposure of sunlight to the display screen, and it should not be placed in a particularly humid warehouse.

VI. Packing list

No.	Item	Qty
1	Power cord	1