



Huazheng

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System





HUAZHENG:

Transformer capacity: 5KVA-2500KVA and below

Primary voltage: transformer below 11.0 kV

Secondary voltage: 433V

Transformer capacity: 15KVA-2500KVA and below

Primary voltage: transformers below 33.0 kV

Secondary voltage: 433V

transformer capacity: 2.5KVA-10000KVA and below

Primary voltage: transformers below 33.0 kV

Secondary voltage: 11.0KV

Introduction

Huazheng®



Transformer Test Control Cabinet



Control Unit



Automatic Comprehensive
Transformer Test Bench



Intermediate Transformer



3 Phase Induction Regulator



02

Test Item



◆ Test Item

Huazheng®

- ✓ Insulation resistance test;
- ✓ DC resistance test of 2 winding
- ✓ Turn Ratio and vector group test;
- ✓ No load test;
- ✓ Load test
- ✓ Power frequency withstand voltage tes
- ✓ Induction withstand voltage test;
- ✓ Transformer temperature rise test;
- ✓ Transformer capacitance and dielectric loss test;
- ✓ Lightning impulse test



03

Technical Information



1. Control Unit



CONTROL UNIT:

Integration device for instrument and instrument

PLC Control device : Siemens S7-200 ;

Distribution device for test item : 500A ;

High-voltage current metering device : 400A ;

High voltage metering device : $22/\sqrt{3}$ KV.

❖ 2. Turn ratio tester & Power analyzer

Huazheng®

TURN RATIO TESTER:

◆ Range : 0.9 ~ 6000

Accuracy : $\pm 0.1\% + 2\text{word}(0.9 \sim 500)$ 、

$\pm 0.2\% + 2\text{word}(501 \sim 2000)$

$\pm 0.3\% + 2\text{word}(2001 \sim 6000)$

◆ Resolution : Min 0.0001

◆ Working power : AC220V $\pm 10\%$ 50 \pm Hz

◆ Ambient temperature : -10°C ~ 40°C

POWER ANALYZER :

◆ Basic measurement accuracy: voltage, current $\pm 0.1\%$

◆ The power is $\pm 0.2\%$ ($\text{COS}\varphi > 0.1$), $\pm 1\%$ ($0.01 < \text{COS}\varphi \leq 0.1$)

◆ Range of voltage measurement: AC 0~800 V

◆ Current measurement range: AC 0-5A





3. DC winding resistance Tester



DC WINDING RESISTANCE TESTER:

1. Output current:

High voltage CH1: 5A, 1A, 0.1A, 0.01A; Low voltage CH2: 20A, 10A, 5A, 2A

2. Measurement range:

(high pressure CH1---5A): $0 \Omega - 4 \Omega$

(high pressure CH1---1A): $20\text{m} \Omega - 20 \Omega$

(high pressure CH1---0.1A): $200\text{m} \Omega - 200 \Omega$

(high pressure CH1---0.01A): $2 \Omega - 2000 \Omega$

(low pressure CH2---20A): $0 \Omega - 0.1 \Omega$

(low pressure CH2---10A): $2\text{m} \Omega - 0.4 \Omega$

(low pressure CH2---5A): $4\text{m} \Omega - 0.8 \Omega$

(low pressure CH2---2A): $10\text{M} \Omega - 2 \Omega$

3. Accuracy: (high pressure CH1): $0.2\% \pm 1 \mu\Omega$

(low pressure CH2): $0.2\% \pm 0.2 \mu\Omega$

4. CT PT

Huazheng®

CT :

Accuracy level : 0.1 ;

Insulation class : $22/\sqrt{3}$ KV ;

Measuring range : 0-200A ;

Transformation ratio : (5,10,20,50,100,200,400)/5A ;

Adjustment method : Computer controlled secondary adjustment



PT :

Accuracy level : 0.1 ;

Measuring range : $22/\sqrt{3}$ KV ;

Transformation ratio : (3.3,6.6,11.0,) / $\sqrt{3}$ KV/0.1KV ;

Adjustment method : Computer controlled secondary adjustment ;

◆ 5. Regulator /Transformer/Generator

Huazheng®



Induction Regulator :
Three-phase input
voltage 380V, output
voltage 10-650V



Intermediate Transformer :
Capacity: 250KVA
Input voltage: 600V
Output voltage :
1.5/3.0/6.3/11.0KV



Frequency Multiplication Generator :
Capacity : 50KW
Input voltage : three phase 380V
Output voltage : 800V
Output frequency : 150HZ

❖ 6. AC hipot tester

Huazheng®



AC Hipot Tester :

HZQ-50KVA/100KV Technical parameters for transformer test

Rated Capacity : 50KVA

Input voltage : 400V ,

Input Current : 50.0A

Output voltage : AC100KV

Output current : 500mA

Ratio : 250

Measuring ratio : 1000

Connct groups: I,I0

◆ 7. Impulse Voltage Generator

Huazheng®

Impulse Voltage Generator :

Rated nominal voltage : $\pm 450\text{kV}$

Rated voltage : $\pm 150\text{kV}$

Rated energy : 20kJ

Total impulse capacitance :

$0.25\mu\text{F}$

The total series : 3 series

Rated power capacity : $1\mu\text{F}$



04

Software



Transformer no_load loss test

Operation step

- 1 Set product number
- 2 Set options of CT or PT
- 3 Input parameters and transfer them to the tester
- 4 Main circuit turn on
- 5 No-load loss test circuit turn on
- 6 Tester begins testing
- 7 Adjust voltage to preset value
- 8 Saves the test data
- 9 Adjust voltage to zero value
- 10 Tester stop testing
- 11 No-load loss test circuit turn off
- 12 Main circuit turn off
- 13 Testing is over

3 Parameters download
6 Test data
Calculating formulas

Ambient temperature: 20.8 °C
Humidity: 20.8 %

0.0000	RMS of ab phase voltage Urmsa(V)	0.0000	RMS of c phase current Irmisc(A)	
Urec(V)	RMS of bc phase voltage Urmsb(V)		Irms = (Irmisa + Irmisb + Irmisc) / 3	
0.0000	RMS of ca phase voltage Urmsc(V)		Active power of a phase Pa(kW)	
ΣP(kW)	Urms = (Urmsa + Urmsb + Urmsc) / 3		Active power of b phase Pb(kW)	
0.0000	Mean value of ab phase voltage Ureca(V)		Active power of c phase Pc(kW)	
P0(kW)	Mean value of bc phase voltage Urecb(V)		Three_phase active power ΣP(kW)	
0.0000	Mean value of ca phase voltage Urecc(V)		Voltage waveform factor d(%)	
I0(%)	Urec = (Ureca + Urecb + Urecc) / 3		Percentage of no-load current I0(%)	
	RMS of a phase current Irmisa(A)		No load active loss P0(kW)	
	RMS of b phase current Irmisb(A)		Testing date	

2 CT Options

- 5A
- 10A
- 20A
- 50A
- 100A
- 200A
- 400A

2 PT Options

- 800V
- 1600V
- 3300V
- 6600V
- 11000V
- 22000V

Product number

- By year
- By month

Real-time information

Test process

4 Main circuit turn on

Operation step

- 1 Set product number
- 2 Set options of CT or PT
- 3 Check the preset parameters
- 4 Main circuit turn on
- 5 Induction withstanding test circuit turn on
- 6 Tester begins testing
- 7 Adjust voltage to preset value
- 8 The timer starts countdown
- 9 Adjust voltage to zero value
- 10 Tester stop testing
- 11 Induction withstanding test circuit turn off
- 12 Main circuit turn off
- 13 Testing is over

Product number

- By year
- By month
- By date
- 1 PIN

Ambient temperature: °C Humidity: %

0.0000 Output voltage of AB phase(V)	0.0000 Output voltage of BC phase(V)	0.0000 Output voltage of CA phase(V)
0.0000 Output current of AB phase(A)	0.0000 Output current of AB phase(A)	0.0000 Output current of AB phase(A)
0.0000 Frequency(Hz)	0.0000 Timer(s)	

DC excitation En DC excitation
Step voltage
Step timer

Preset parameters
Preset voltage(V)
Setting current(A)
Setting timer(s)

Turn on circuit of drag motor
Turn on circuit of excitation regulating

Real-time information

Label46

Test process

Adjust to preset value Adjust to zero value Press down to increase voltage Press down to decrease voltage To the first window

2 CT Options

- 5A
- 10A
- 20A
- 50A
- 100A
- 200A
- 400A

2 PT Options

- 800V
- 1600V
- 3300V
- 6600V
- 11000V
- 22000V

4 Main circuit turn on

5 Turn on the circuit of 10kV products

5 Turn on the circuit of 35kV products

05

Project







THANKS