

GF1060

ISO17025 Electrical Laboratory Current Transformer Test Bench

The GF1060 current transformer test bench is suitable for the calibration of traditional electromagnetic current transformers and electronic current transformers with small voltage signal output.

The GF1060 current transformer test bench is composed of a 0.05 class digital comparison current transformer tester (calibrator), a 0.02S class standard current transformer, a current riser, a high-power voltage regulator, a current transformer Burden box, an industrial computer, etc. The test system uses self-developed human-computer interactive operation software, which is popular and easy to use, and can automatically generate reports according to the customer certificate template.

Application

1. Electrical laboratory;
2. Metrological service center;
3. ISO17025 electrical laboratory;
4. Electricity power bureau & power company;
5. National Metrology and testing department;
6. Power engineering commissioning company;
7. Current transformer and voltage transformer factory;
8. Electrical Department of industrial and mining enterprises;



Standard

1. IEC61869-2 & IEC60044-1, IEEE C57.13
2. GB/T 20840.1-2010 Instrument transformers - part 1: General requirements
3. GB/T 20840.2-2014 Instrument transformers - part 2: Additional requirements for current transformers
4. GB/T 20840.8-2007 Transformers - Part 8: Electronic Current Transformers
5. JJG 1189.3-2022 Measurement transformers - Part 3: Power current transformers
6. JJG169-2010 Transformer Calibrator
7. JJG1021-2007 Verification Regulation for Power Transformers
8. JJG 313-2010 Verification Regulation for Current Transformers for Measurement
9. T/ZDG 018-2018 Technical Conditions for 10kV and 20kV AC Sensors in Distribution Networks

Features

1. Modular design, all modules can be disassembled and sent for inspection separately.
2. The calibrator core adopts a dual CPU architecture, which is powerful. The 24Bit AD chip and 512 times Oversampling technology greatly expand the bandwidth and improve the measurement accuracy. At the same time, FIR filter is used to improve the dynamic range and signal-to-noise ratio.
3. The built-in calibrator adopts the principle of digital comparison, and can select reference standards with different transformation ratios compared to the tested object. It is compatible with the calibration of current transformers with various transformation ratios.
4. The error measurement range is not limited, the ratio difference range is supported: $0.000 \sim \pm 100\%$ (determined by the standard and the amplitude being tested), and the angle difference is supported by $0 \sim \pm 10800'$.
5. The tested input has a conventional analog current input interface and a small signal input interface, which can meet both traditional electromagnetic current transformer testing and electronic current transformer testing with small signal output.
6. The use of automatic shifting design during testing effectively improves testing accuracy.
7. The current load box adopts a programmable control method, without the need for manual wire replacement, and the calibrator is equipped with an electronic load to meet the load requirements of electronic current transformer testing.
8. Support harmonic analysis function.
9. Support error statistics and error curve display function.
10. Support for standard and tested decimal ratios.
11. Supporting standards and being tested for different ratios.
12. This product has strong adaptability and scalability, and supports subsequent upgrades.

Main Functions

1. It is possible to verify the phase angle and ratio differences of traditional electromagnetic current transformers.
2. Electronic current transformers (current sensors) with small signal output can be verified for ratio and phase angle differences.
3. The composite error of current transformers can be calculated.
4. The polarity of the current transformer can be tested.
5. Interturn insulation strength test and equal ampere turn error test can be conducted.
6. Real time display of the output waveform of the transformer, which can display relevant information such as current primary voltage, current, frequency, etc., facilitating comprehensive evaluation of the calibrated parameters.
7. Equipped with adsorption recording function, it automatically records data when the flow reaches the set calibration point.
8. Automatically generate test reports, which can be edited according to user templates.

Parameters

Electrical parameters	
current transformer tester	
Verification of traditional electromagnetic current transformers	
Accuracy class	0.05 (Ratio error \leq 0.05%, Phase error \leq 2')
Standard current measurement range	1%~120%In, 0.05%RD (In=1A, In=5A)
Tested current measurement range	1%~120%In, 0.05%RD (In=1A, In=5A)
Verification of electronic current transformers(Optional)	
Standard current measurement range	1%~120%In, 0.05%RD (In=1A or In=5A)
Tested small signal input voltage range	0~8.5V (333mV, 1V)
Tested small signal Input impedance	100M Ω
Accuracy class	Ratio error Phase error
	0.05% (16.65mV~8.5V) 2' (16.65mV~8.5V)
Power supply	AC 220V \pm 10%
Standard current transformer	
primary current input range	5A~5000A
Secondary current output range	1A, 5A
Accuracy class	0.02S (Ratio error \leq 0.02%, Phase error \leq 0.6')
Current Generator	
Capacity	0~300A
Secondary current output range	20kVA
Voltage input range	0~250V
Voltage regulator	
Voltage input range	0~5000A
Secondary current output range	15kVA
Voltage input range	0~300V
Current transformer burden box	
Power factor	1.0, 0.8
Rated current input port	1A, 5A
Rated Capacity	1A: 1VA, 2.5VA, 5VA 5A: 2.5VA, 3.75VA, 5VA, 10VA
Accuracy class	\pm 3% +0.025VA
Power supply	AC 220V \pm 10% 50/60 Hz
Communication port	USB, RS232, 10/100M Lan
PC control software	Yes, Optional
Printer	Yes, Optional

Standards

Reference standards	GB1207-2006, GB1208-2006, GB16847-1997 IEC60044-1, IEC60044-2,6, IEC61869, ANSI/IEEE C57.13
Safety standards	GB 4793.1-2007
EMC	EMC standard 89/336/EEC
	FCC Subpart B of Part 15 Class A
	IEC 1000-4-2/3/4/6

Mechanical parameters

Overall dimension (L x W x H) (mm)	1800 x 1200 x 1000
Weight (kg)	≤300

Environmental conditions

Relative humidity	Relative humidity 5%-95% not condensing
Operating temperature	0°C to +50°C
Storage temperature	-20°C to +70°C

Note: The current transformer tester with built-in resistance load, and when testing the electronic current transformer for small signal output voltage, the load can be switched through software control. It has loads such as 1k Ω, 2k Ω, 5k Ω, 10k Ω, 20k Ω, 50k Ω, 100k Ω, etc.