GF1000-ANSI

Multi-Positions Single Phase Watt-Hour Meter Test Bench

The GF1000-ANSI multi-positions single phase Watt-hour meter test bench can measure mechanical meters, electronic mechanical meters and electricity meter error by the way of automatic, semi-automatic or manual operation. It composes of single phase programmable power source, high precision single phase reference energy meter, meter suspension test rack, Multi-channel server and precision clock source etc. GF100 ANSI meter test bench is applied in the measurement centre of grid company energy measurement department of power supply company and energy management utility, industrial enterprise and meter manufacturers. It is strictly in accordance with IEC60736, IR46 and ANSI C12.20 standard, meeting ISO17025 laboratory standards!

Functions

1.Electricity meter accuracy verification

Basic error
Constant test
starting test
Creep test
Indication error
Daily timing error
Maximum demand error test
Impact test

2.Electricity meter function check

Dial test (Register test) function
Tariff and Time Period Function
Event record
Measurement and monitoring functions
Step by step electricity consumption
Display function
Freeze function

3.Electricity meter communication testing

Consistency check of communication protocol
Carrier Communication Performance Test

4.Electricity meter conformance testing

Error variation test
Error consistency test
Load current fluctuation test(Dips and Interruptions)

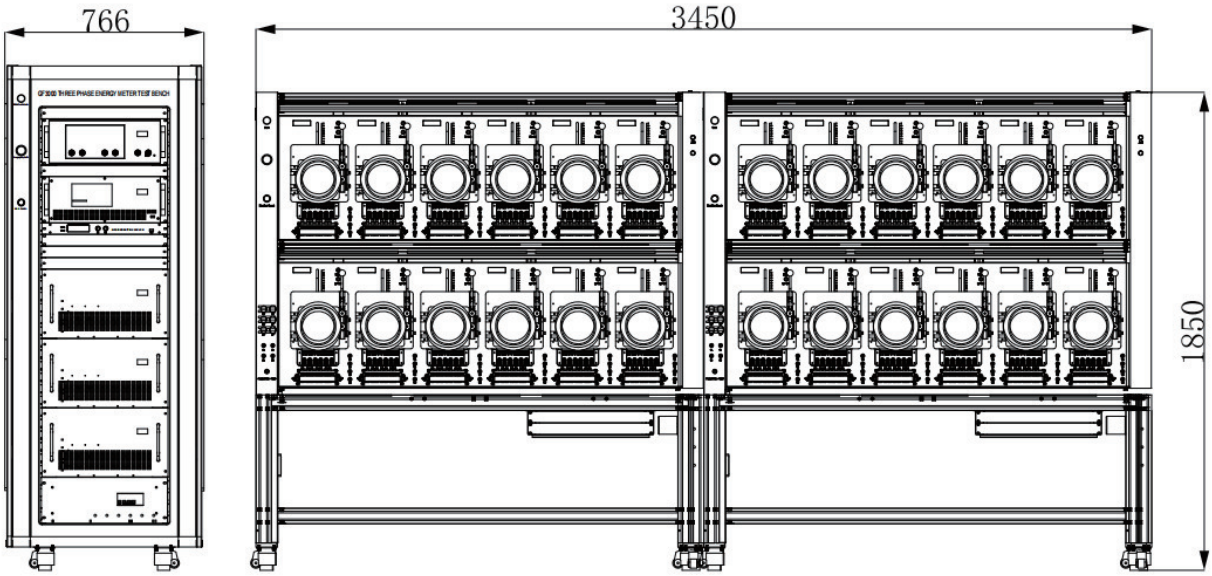
5.Electricity meter Cost control test

Cost control function test
Safety certification test
Parameter update test
Remote control test

Features

1. The device adopts a split type (cabinet+rack) structure, equipped with fixed universal wheels for easy movement.
2. The device adopts a ANSI socket meter holder, which can quickly connect voltage, current, and auxiliary terminals, reduce manual operation, and improve work efficiency.
3. The device adopts multi-channel server communication, and each meter has an independent RS-485 communication channel, making the communication of the electric energy meter stable, reliable, accurate, and fast.
4. The device is equipped with a Beidou time base source system, which supports functions such as satellite positioning output, high-precision timing output, and calculation of daily timing errors for watt-hour meters.
5. The device adopts hardware module control to conduct tests such as short-term voltage interruption, rapid load current changes, and zero line current switching.
6. The device supports the management function of the Register test scheme, and can conduct register test experiments for the sum of various sub rates. It supports register test according to the set time or electric energy.
7. The device can simultaneously calibrate watt-hour meters of the same specifications, different constants, and different levels.
8. The device can set and measure 2nd to 63rd harmonics, measure distortion, and perform harmonic monitoring.

Dimension



Parameters

Electrical parameters	
Accuracy	0.02%, 0.05%, 0.1%
Power Supply	AC 180-265V, or 3×220/380V±15%, frequency 50/60Hz.
AC Voltage Output	
Range	57.7V, 100V, 220V, 380V
Adjustment range	(0-120)%RG(1)
Adjustment fineness	0.01%RG, 0.1%RG, 1%RG, 10%RG as optional.
Stability	0.01%/120s
Distortion	0.3% (Non-capacitive load)
Output load	1500VA
Measuring accuracy	0.02%RG or 0.05% RG or 0.1% RG
AC Current Output	
Range(I1,I2,I3)	0.01A, 0.025A, 0.05A, 0.1A, 0.25A, 0.5A, 1A, 2.5A, 5A, 10A, 25A, 50A, 100A, 120A
Adjustment range	(0-120)%RG
Adjustment fineness	0.01%RG, 0.1%RG, 1%RG, 10%RG as optional.
Stability	<0.01%/120s
Distortion	≤0.3% (Non-capacitive load)
Output load	2400VA
Accuracy	0.02%RG or 0.05% RG or 0.1% RG
Power Output	
Active power output stability	<0.01%RG/120s
Reactive power output stability	<0.02%RG/120s
Active power measuring accuracy	0.02%RG or 0.05% RG
Reactive power measuring accuracy	0.1%RG
Phase Output	
Output adjustment range	0°-359.9999°
Output adjustment fineness	10, 1, 0.1, 0.01 as optional.
Resolution	0.0001°
Accuracy	0.02° or 0.05° or 0.1°
Power Factor	
Adjustment range	-1 ~ 0 ~ 1
Resolution	0.0001
Measurement accuracy	0. 0005
Frequency Output	
Adjustment range	40Hz-70Hz
Output adjustment fineness	5Hz, 1Hz, 0.1Hz, 0.01Hz as optional.
Resolution	0.001Hz
Accuracy	0.002Hz
Voltage /Current/Harmonic Setting	
Harmonic number	2-63times
Harmonic content	0-40%
Harmonic phase	0-359.99
Harmonic setting accuracy	(10%±0.1%)RD(2)

Electrical parameters - continued	
Three Phsase Reference Meter	
AC Voltage Measurement	
Range(U1, UN)	60V, 120V, 240V, 480V
Measurement range	(0-120)%RG(1)
Resolution	0.01%RG
Accuracy	0.02%RD or 0.05% RD
AC Current Measurement	
Range(I1)	0.001A, 0.002A, 0.005A, 0.01A, 0.02A, 0.05A, 0.1A, 0.2A, 0.5A, 1A, 2A, 5A, 10A, 20A, 50A, 100A, 120A
Measurement range	(0-120)%RG
Resolution	0.01%RG
Accuracy	0.02%RD or 0.05% RD
Phase Measurement	
Range	0°-359.9999°
Resolution	0.0001°
Accuracy	0.02° or 0.05°
Power Factor Measurement	
Range	-1.0000 ~ 0.0000 ~ 1.0000
Resolution	0.0001
Accuracy	0. 0005
Frequency Measurement	
Range	40Hz-70Hz
Resolution	0.001Hz
Accuracy	0.002Hz
Voltage /Current/Harmonic Measurement	
Harmonic number	2-63times
Harmonic content	0-40%
Accuracy	0.3%RD
Power Energy Measurement Error	
Active power energy	0.02%RG or 0.05% RG or 0.1% RG
Reactive power energy	0.1%RG
Energy Pulse Output	
Energy pulse type	active pulse, reactive pulse, apparent pulse
Pulse constant set range	(1--1000000000000)/kwh
Energy pulse output	5V,12V
Pulse output frequency	≤50kHz
Energy Pulse Input	
Energy pulse type	active pulse, reactive pulse, apparent pulse
Pulse constant set range	(1--100000000000)/kwh
Energy pulse input	5V,12V
Pulse input frequency	≤50kHz
Meter Position	
Position	3, 6, 12, 20, 24, 40, 48pcs meter

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ENERGY METER TEST EQUIPMENT

Electrical parameters - continued	
ANSI Meter Type	
Meter form	1S
Standard	
Standard	IEC 62053-21,22, 23; IEC 60736; IR46; ANSI C12.20-2002; JJG 597-2005; JJG596-2012; JJG 1085-2013; JJF 68-2019; DL/T 826-2002; DL/T 1478-2015; DL/T 448-2016; EN 50470-1, EN 50470-2, EN-50470-3; IEC 61010;
Safety	
Isolation protection	IEC 61010-1:2001
Measurement Category	300 V CAT III, 600 V CAT II
Degree of protection	IP20
Declaration of conformity	CE & CNAS certified
Mechanical parameters	
Dimensions (mm)	Cabinet size: 766 * 870 * 1956mm (L * W * H). Bench size: 3450 * 750 * 1850mm (L * W * H).
Weight (kg)	About 650
Environmental conditions	
Ambient temperature	0°C to +40°C
Relative humidity	35%-85%

(1) RG means range, the same as below;
(2) RD means the setted harmonic content, harmonic can be a single output, also multiple output.