GF1000

Multi-Positions Single Phase kWh Meter Test Bench

The GF1000 series multi-positions single phase kWh 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. GF1000 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.

Features

1. With auto PC control software;
2. With barcode scanning function optional;
3. Self-check and perfect protection function;
4. Meter positions can be chosen from 3 - 48;
5. High resolution of voltage, current and power;
6. Large LCD display and simple interface for operation;
7. Full automatic, semi automatic and manual operation available;
8. Aluminum alloy material,light and strong and corrosion resistant;
9. Wide current measuring range which can be automatically switched;
10. High stability of power source which is up to 0.01%/100s and low distortion which is no more than 0.3% ;
11. High accuracy, 6-digit display the energy relative errors are no more than 0.05%(0. 1%)within the measuring range ;
12. Equipped with sing phase mulfunction reference meter and progam-conrolled single phase power source which can be separately used and are convenient for testing;

Functions

1. Pre-warming;
2. Calibration of lower accuracy reference standard meter;
3. Meter constant test;
4. Testing single-phase meters under tampered conditions;
5. Starting current test;
6. Able to print out all kinds of test reports with the standard forms;
7. Dial test (Register test);
8. Influence quantity test (voltage, frequency, harmonic distortion, etc.);
9. Dips and Interruptions;
10. Calibrate all kinds of electronic and inductive single phase kWh meter;
11. Creep test (No-load test);
12. Accuracy test in all four quadrants (active, reactive and apparent energy);

13. Automatic measurement like shunting, basic errors, standard deviation etc;
14. Test voltage, current, active/reactive/apparent power, phase, power factor, frequency, and etc;
15. Able to display waveform of voltage and current able to set 2nd-51st harmonic of voltage and current, measure the waveform distortion and harmonic content, and display harmonic chart;
16. Equipped with RS232 communication port;

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 (max 480V)
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
AC Current Output	
Range(I1,I2,I3)	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	1500VA
Accuracy	0.02%RG or 0.05% 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°-359.999°
Output adjustment fineness	10, 1, 0.1, 0.01 as optional.
Resolution	0.01°
Accuracy	0.02° or 0.05°

Electrical parameters - continued	
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	2-51times
Harmonic content	0-40%
Harmonic phase	0-359.99
Harmonic setting accuracy	(10%±0.1%)RD(2)
Power Energy Measurement Error	
Active power energy	0.05%RG or 0.02% RG
Reactive power energy	0.1%RG
Power Pulse Output	
Power pulse type	active pulse, reactive pulse
Active power pulse output	5V, 10mA
Pulse output frequency	Max 50kHz
Power Pulse Input	
Pulse constant set range	(1--599999999)/kwh
Energy pulse type	support active and reactive pulse, the highest frequency power pulse input is 200KHz.
Meter Position	
Position	3, 6, 12, 20, 24, 40, 48pcs meter
Standard	
Standard	IEC 62053-21,22, 23; IEC 60736; 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: 800 * 600 * 1850mm (L * W * H). Bench size: 2*2400 * 760 * 1846mm (L * W * H).
Weight (kg)	About 200
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.