GF3021

Testing

High Performance Multifunction Instrument Calibrator

GF3021 Portable Multifunction Instrument Calibrator is suitable for power plant and power grid companies for the following function: metrology and testing department and instrumentation classes, national levels metrological and testing institutions, railway, petroleum, chemical industry and other large industrial and mining enterprises, scientific research units, etc. The core technology function with digital signal processor (DSP) and 16 high-speed digital converters composed of high precision wideband linear power amplifier. The signal power source is 32bit DSP and 16 high-speed digital-to-analog converters, it can control the sine wave and distortion wave signal source. The integrated design of reference meter and source is adopted for this multi-product calibrator, as high accuracy three phase ac voltage source and current source, also as DC voltage source & current source, embedded industrial window operating system, auto programmable test scheme, save test data result. This GF3021 power calibrator is a excellent test tool for electrical engineer to test instruments.

Functions

1. Testing multimeter;
2. Testing frequency meter;
3. Testing synchronous meter;
4. Testing all kinds of energy meter;
5. Testing RTU & AC sampler device;
6. Testing all kinds of watt-hour meter;
7. Testing all kinds of DC voltmeter and ammeter;
8. Measuring mechanical meter and electric meter;
9. Measuring frequency, phase shift and power factor;
10. Testing single & three-phase active, reactive power meter;
11. Harmonic spectrum analysis for voltage and current up to the 31st order;
12. Power and energy measurements for active, reactive and apparent power;
13. Testing all kinds of three phase and single phase AC voltmeter and ammeter;
14. Testing all kinds of transducers (voltage transducer, current transducer, active & reactive power transducer, phase angle transducer, power factor transducer & frequency transducers etc) ;

Features

1. Download word file test report;
2. Programmable and save test scheme;
3. As voltage source, current source and power source with high precision, and it is a high stability standard source;
4. The built-in electric measurement transducer, electric measurement instrument and meter instructions of verification procedures, fully automatic or semi-automatic for verification, and save 10000 group test data;

5. 2nd-31st times harmonics output;
6. Power factor from -1.00000 to 1.00000;
7. Fully meet ISO17025 laboratory standards;
8. High precision linear power amplifier technology;
9. Embedded industrial window 10 operating system;
10. 10-inch big screen color display and English interface;
11. With USB port, it can connect computer for data management;
12. Measurement range widely from 3×600V/3×20A AC and 1000V/20ADC;
13. For the self-software calibration, you don't need to open the case, it's stable and reliable;
14. With automatic failure detection function, shows fault part, the convenience users check line;
15. Voltage short circuit, current open protection and power amplifier overheating protection function;

Parameters

Electrical parameters	
Accuracy	0.05%
Power supply	Single phase AC 220V±10% or 110V±10%, 50/60Hz
Communication port	USB, RS232, RS485, LAN
AC Voltage output	
Range(U1,U2,U3)	50V, 100V, 200V, 400V, 600V
Adjustment range	(0 - 120)% RG
Adjustment resolution	0.01% RG, 0.1% RG, 1% RG, 10% RG
Stability	0.01% /1min
Distortion	≤0.2% (non-capacitive load)
Max. output load	25VA for each phase
Accuracy	0.05% RG
AC Current output	
Range(I1,I2,I3)	0.5A, 1A, 2.5A, 5A, 10A, 20A
Adjustment range	(0 - 120)% RG
Adjustment resolution	0.01% RG, 0.1% RG, 1% RG, 10% RG
Stability	0.01% /1min
Distortion	≤0.2% (non-capacitive load)
Max. output load	25VA for each phase
Accuracy	0.05% RG
AC Power output	
Active output stability	0.01%RG/1min
Reactive output stability	0.02%RG/1min
Active accuracy	0.05% RG
Reactive accuracy	0.1% RG

Electrical parameters - continued	
Frequency output	
Adjustment range	45-65Hz
Adjustment resolution	1Hz, 0.1Hz, 0.01Hz and 0.001Hz
Resolution	0.001Hz
Accuracy	0.002Hz
Power factor output	
Adjustment range	-1 to 0 to +1
Adjustment resolution	0.0001
Resolution	0.0005
Phase output	
Adjustment range	0°-359.999°
Adjustment resolution	10°, 1°, 0.1°, 0.01°
Resolution	0.001°
Accuracy	0.05°
Harmonic configuration	
Times	2nd to 31st
Content	0-40%
Phase	0°-359.999°
Configuration error	(10% RD + 0.1%), RD refers to the configuration value of harmonic contents
DC Voltage output	
Range	75mV, 75 V, 150 V, 300 V, 500V, 1000 V
Adjustment range	(0-120)% RG
Adjustment resolution	0.01% RG, 0.1% RG, 1% RG, 10% RG
Stability	0.01% RG / 1 min
Distorting	≤0.2% (non-capacitive load)
Output load	25VA
Accuracy	0.05% RG
Ripple contents	≤1%
DC Current output	
Range	0.5 A,1A, 2.5 A, 5 A, 10A, 20 A
Adjustment range	(0-120)% RG
Adjustment resolution	0.01% RG, 0.1% RG, 1% RG, 10% RG
Stability	0.01% RG / 1min
Distortion	≤0.2% (non-capacitive load)
Output load	25VA
Accuracy	0.05% RG
Ripple contents	≤1%

Electrical parameters - continued	
Energy Error	
Active error	0.05% RG
Reactive error	0.1% RG
DC Input Voltage Measurement	
Range	0 to ±20V
Measurement range	(0-120)% RG
Accuracy	0.01% RG
Resolution	0.001% RG
DC Input Current Measurement	
Range	0-20mA
Measurement range	(0-120)% RG
Accuracy	0.01% RG
Resolution	0.001% RG
Function	
LCD	10 inch color
Power meter test	Yes
Energy meter test	Yes
Transducer test	Yes
Digital meter test	Yes
RTU & AC sampler device test	Yes
Protection relay device test	Yes
Power factor meter	Yes
Frequency meter test	Yes
Current meter test	Yes
Voltage meter test	Yes
Data storage	Yes
PC control software	Yes, optional
Standard	
Standard	JJG126-1995, JJG_597-2017, Q/GDW 1899-2013, DL/T1112-2009, DL/T630-1997, JJG124-2005; JJF1587-2016; IEC61010, IEC 61000, IEC 61326
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 (W×H×D) (mm)	460x430x185
Weight (kg)	20
Environmental conditions	
Working temperature	0°C to 40°C
Storage conditions	-30°C to 60°C
Relative humidity	≤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.