# GF3021

## PORTABLE HIGH PRECISION MULTIPRODUCT CALIBRATOR

GF3021 Multifunction portable multiproduct Calibrator is suitable for power plant and power grid companies for the following function: measuring and testing department and instrumentation classes, national levels measuring 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 source is 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 multiproduct 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 plan, save test data result. This power calibrator GF3021 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. Power and energy measurements for active, reactive and apparent power;
12. Harmonic spectrum analysis for voltage and current up to the 31st order;
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 test report;
2. 2-31 times harmonics output;
3. Programmable and save test scheme;
4. Fully meet ISO17025 Laboratory Standards;
5. High precision linear power amplifier technology;
6. Embedded industrial window 7 operating system;
7. 10-inch big screen color display and English interface;
8. With USB port, it can connect computer for data management;
9. For the software calibration, you don't need to open the case, it's stable and reliable;
10. With automatic failure detection function, shows fault part, the convenience users check line;
11. Voltage short circuit, current open protection and power amplifier overheating protection function;
12. As voltage source, current source and power source with high precision, and it is a high stability standard source;
13. 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;

## Parameters

| Electrical parameters | |
|---|---|
| Accuracy class | 0.05%, 0.1% |
| 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) |

| Electrical parameters - continued | |
|---|---|
| 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 |
| **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 | 2 to 31 |
| 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 |

| Electrical parameters - continued | |
|---|---|
| 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% |
| **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 |
| **Standard** | |
| Standard | JJG126-1995, JJG_597-2017, Q/GDW 1899-2013, DL/T1119-2009, 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.