

GF101

PROGRAMMABLE SINGLE PHASE PHANTOM LOAD POWER SOURCE

The GF101 AC power calibrator is equipped with RS232 port as standard communication interface to control external devices remotely. In the power calibration mode, the GF101 programmable phantom load power source can be used as a source to calibrate single-phase AC watt meters, power analyzers, and energy meters. In this mode, the output voltage can be set up from 0 to 1000V, the output current from 0 to 1000V, the output current from 0 to 200A, and the power factor from -1.0000 to +1.0000 lead/lag in the frequency band from 40Hz to 70Hz. Power factor is an important element when users judge the efficiency of a device. It is suitable for power department, measuring department, quality control department, research units, institution of higher learning, electric energy meter, power distribution terminals, power supply management, load control, power quality, reactive power compensation device and production of the enterprise and so on. It can be as single phase



Application

1. Switching range automatically;
2. Output range widely: 0-200A, 0-1000V;
3. High precision 0.02%, as electrical laboratory standard;
4. Applying the 32-bit MPU + DSP + FPGA, powerful flexible;
5. With RS232 interface, programmable controlled by computer;
6. Using software calibration, easy to operate, stable and reliable;
7. Big screen, 6 inch touch TFT LCD display, Chinese or English menu, easy to operate;
8. Using hardware PID, fast response, the change of load will not cause volatility output;
9. A wide range output of voltage and current, big power, high stability, small waveform distortion degree;
10. Setting up and taking the load regulation of voltage, current, phase and frequency of the power factor;
11. Amplitude 2nd-128th phase harmonics, and it can be added to the fundamental wave in every harmonic output;
12. Perfect over-current, over-voltage, over-heat, shorts-and-opens, overload protection, automatic failure detection;
13. Strong load ability, taking capacitive load, sensibility load, resistive load or composite load, load regulation is higher than 0.01%;
14. Power frequency waves reach up to 50000 points every cycle wave, signal output without filter, precise waveform output, precise harmonic output, small harmonic distortion degree;

Features

1. Universities;
2. Energy meter R & D;
3. Electrical testing center;
4. AMI Research institutes;
5. Transducer manufacturers;
6. Power meter manufacturers;
7. Digital meter manufacturers;
8. Pointer meter manufacturers;
9. Panel meter manufacturers;
10. Railway electrical department;
11. ISO17025 Electrical laboratory;
12. Measurement and control device factory;
13. Electricity power bureau & power company;
14. Power engineering commissioning company;
15. Manufacturer of reactive power compensation device;
16. Electrical Department of industrial and mining enterprises;

Parameters

| Electrical parameters | |
|---------------------------|---|
| Accuracy class | 0.02%, 0.05%, 0.1% |
| Power supply | Single phase AC 85-265V, 50/60 Hz |
| AC Voltage output | |
| Range | 57.7V / 100 V / 220V / 380V, Switch automatically (max 500V or |
| Adjustment resolution | 0.01%, 0.1%, 1%, 10%, |
| Accuracy | 0.02% RG, 0.05% RG |
| Stability | Better than 0.01% RG/1min |
| Distortion degree | Better than 0.1% (not capacitive load) |
| Load capacity | 25VA or 50VA |
| Full load regulation rate | Less than 0.01% RG |
| Full load regulation time | Less than 1ms |
| Temperature drift | 8 PPM/°C |
| Long-term stability | 60 PPM/year |
| AC Current output | |
| Range | 0.1A / 0.25A / 0.5A / 1A / 5A / 10A / 20A / 50A / 100A / 200A, Switch automatically(max 120A or 240A) |
| Adjustment resolution | 0.01%, 0.1%, 1%, 10%, |
| Accuracy | 0.02% RG, 0.05% RG |
| Stability | Better than 0.01% RG/1min |
| Distortion degree | Better than 0.1% (not capacitive load) |
| Load capacity | 50VA, 100VA, 200VA, 500VA |
| Full load regulation rate | Less than 0.01% RG |
| Full load regulation time | Less than 1mS |
| Temperature drift | 8 PPM/°C |
| Long-term stability | 60 PPM/year |

Electrical parameters - continued
Power output

| | |
|-------------------------|---------------------------|
| Active power accuracy | 0.02%, 0.05%, 0.1% |
| Reactive power accuracy | 0.1% |
| Stability | Better than 0.01% RG/1min |

Phase angle

| | |
|----------------------------|-----------------------------------|
| Range | 0.000°-359.999° |
| Output adjustment fineness | 10°, 1°, 0.1°, 0.01° as optional. |
| Resolution | 0.001° |
| Accuracy | 0.02°, 0.05° |

Power factor

| | |
|-----------------|-------------|
| Adjusting range | -1 ~ 0 ~ +1 |
| Resolution | 0.0001 |
| Accuracy | 0.0005 |

Frequency

| | |
|----------------------------|--------------------------------------|
| Range | 40.000-70.000 Hz |
| Output adjustment fineness | 5Hz, 1Hz, 0.1Hz, 0.01Hz as optional. |
| Resolution | 0.001 Hz |
| Accuracy | 0.002Hz |
| Temperature drift | 0.5 PPM/°C |
| Long-term stability | 4 PPM/year |

Harmonic

| | |
|-----------------------|---------------------------------------|
| Harmonic times | 2 nd -63 th |
| Adjustment resolution | 0.1% (Compared with fundamental wave) |

Harmonic content (Compared with fundamental wave)

| | |
|---------|------------|
| Voltage | ≤40% |
| Current | ≤40% |
| Phase | 0°-360.00° |

Functions

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|-------------------------|--------------------------------|
| Communication Port | RS232 |
| Programmable controlled | Yes |
| Key | 20pcs |
| LCD | 6 inch TFT color touch display |
| PC control software | Optional |

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 |
|----------|---|

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×D×H) (mm) | 420x320x155 |
| Weight (kg) | 12 |

Environmental conditions

| | |
|-----------------------|---------------|
| Operating temperature | 0°C to 50°C |
| Storage conditions | -30°C to 60°C |
| Relative humidity | ≤85% |

Selection guide

| NO. | Accuracy | Voltage range | Current Range | Weight |
|-----------|----------|---------------|---------------|--------|
| 1011201 | 0.1% | 0-500V | 0-120A | 12KG |
| 10112005 | 0.05% | 0-500V | 0-120A | 12KG |
| 101201 | 0.1% | 0-500V | 0-20A | 10KG |
| 1012005 | 0.05% | 0-500V | 0-20A | 10KG |
| 101121 | 0.1% | 0-500V | 0-12A | 8KG |
| 1011205 | 0.05% | 0-500V | 0-12A | 8KG |
| 101T1201 | 0.1% | 0-1000V | 0-120A | 13KG |
| 101T12005 | 0.05% | 0-1000V | 0-120A | 13KG |
| 101D2001 | 0.1% | 0-600V | 0-200A | 20KG |
| 101D20005 | 0.05% | 0-600V | 0-200A | 20KG |

Accessory

