

## GF333

### HIGH PRECISION MULTIFUNCTION AC DC DIGITAL MULTIMETER

GF333 multifunction digital reference multimeter can be used as a calibration device standard meter, also as a testing calibrator in metrology test center of grid corporation, power company and measurement department in power plant, national levels of metrological service, quality inspection departments, research institutes, tertiary institutions, industrial and mining enterprises, electric energy meter and electrical instrument production enterprises etc. The model GF333 high precision reference multimeter can test three phase ac voltage, current, phase angle, power, reactive power, apparent power, energy, power factor, frequency, also test DC voltage, DC current and DC power and transducer. The reference multimeter fully meet ISO17025 standard in the electrical laboratory.

### Application

1. Power plant;
2. AMI design center;
3. Energy meter R & D;
4. Electrical laboratory;
5. Watt-hour meter factory;
6. Metrological service center;
7. Laboratories of power utilities;
8. Electricity meter manufacturers
9. Meter test bench integrated factory;
10. National Metrology and testing department;
11. Electricity power bureau & power company;
12. Electrical Department of industrial and mining enterprises;



### Functions & Features

1. Measure calibration device of voltage, current, power stability;
2. Measure calibration device the standard deviation of estimate;
3. Measure the AC voltage, current 2-31 harmonic content and waveform distortion degree;
4. Measure the AC voltage, current, active power, reactive power, frequency, phase angle and power factor etc;
5. Measure active power energy error, reactive power energy error, the maximum output pulse frequency is to 2 MHz;

6. Transducer measurement;
7. Measure DC voltage and DC current;
8. Measure calibration device of the magnetic induction;
9. With RS232 interface, it can be controlled by PC operation;
10. Using 6.5 inch TFT color LCD screen, character display clear chart.
11. Using the 32 bit DSP and 24 bit low power and high speed DAC consists of high accuracy AC collector;
12. Have the advantages of wide measuring range, high precision, stable and reliable operation, simple operation etc.
13. Measure the voltage of the calibration device three-phase symmetric degrees, the current of three three-phase symmetric degree;

## Parameters

Electrical parameters	
Accuracy class	0.02%, 0.05%
Power supply	AC 220 V $\pm$ 10% or 110 V $\pm$ 10%, 50/60Hz
Power consumption	<30VA
Warming-up time	<30min
Voltage measurement	
U1, U2, U3	6.25V, 12.5V, 25V, 50V, 100V, 200V, 400V, 800V (switch automatically), max 1000V
Range	(0-120%)RG
Resolution	0.01%RG
Accuracy	0.02%RD or 0.05%RD
Current measurement	
I1, I2, I3	0.25, 0.5, 1, 2.5, 5, 10, 25, 50, 100A(switch automatically)
Range	(0-120%)RG
Resolution	0.01%RG
Accuracy	0.02%RD or 0.05%RD
Power measurement	
Active accuracy	0.02%RD or 0.05%RD
Reactive accuracy	0.05%RD or 0.1%RD
Apparent accuracy	0.02%RD or 0.05%RD
Energy measurement	
Active accuracy	0.02%RD or 0.05%RD
Reactive accuracy	0.05%RD or 0.1%RD
Phase measurement	
Range	0.00°-359.99°
Resolution	0.001°
Accuracy	0.02° (voltage $\geq$ 50V and current $\geq$ 250mA)

**Electrical parameters - continued**
**Frequency measurement**

Range	45-65Hz
Resolution	0.001Hz
Accuracy	0.001Hz

**Power Factor measurement**

Range	-1.00000 ~ 0 ~ +1.00000
Resolution	0.0001
Accuracy	0.0005

**Electric energy pulse output**

Pulse constant range	1-2880000000
Output frequency of max. pulse	600 kHz
Load capacity	>2mA
Default pulse output frequency	10kHz-600kHz

**Energy pulse Input**

Input range of pulse constant	600-700000
Setting range of test pulse	1-999999999
Max. pulse receiving frequency	2MHz
Pulse input level	5V

**Voltage/current harmonics measurement**

Times	2-31
Error	0.05%
Distortion degree error	0.05%

**Transducer measurement**

DC voltage range	$\pm 1, \pm 5, \pm 10, \pm 20$ V
Accuracy	0.01%
DC current range	$\pm 1, \pm 2.5, \pm 5, \pm 10, \pm 20$ mA
Accuracy	0.01%
Ripple error	1%

**DC measurements (option)**

DC voltage	50V, 100V, 200V, 400V, 800V (switch automatically), max 1000V
Range	(0 -120%) RG
Resolution	0.01% RG
Accuracy	0.02% RD
DC current	0.1A, 0.3A, 1A, 3A, 10A, 30 A (switch automatically)
Range	(0-120%) RG
Resolution	0.01% RG
Accuracy	0.02% RD

**Function**

LCD Display	6.5 inch color display
Vector diagram	Yes

**Electrical parameters - continued**
**Function - continued**

Waveform	Yes
Energy accumulation	Yes
Harmonics measurement	Yes
Distortion degree	Yes
Self-calibration	Yes
Data storage	Yes
PC software	Optional
Communication port	RS232

**Standard**

Standard	IEC 62053-21,22, 23; IEC 60736; ANSI C12.20-2002; JIG 597-2005; JIG596-2012; JIG 1085-2013; JJF 68-2019; DL/T 826-2002; DL/T 1478-2015; DL/T 448-2016
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**Safety**

Isolation protection	IEC 61010-1:2001
Measurement Category	300 V CAT III, 600 V CAT II
Degree of protection	IP40
Declaration of conformity	CE & CNAS certified

**Mechanical parameters**

Dimensions (W×H×D) (mm)	440×360×160
Weight (kg)	10

**Environmental conditions**

Operating temperature	10°C to 30°C
Storage temperature	-20°C to 65°C
Relative humidity	≤85%
Influence of external fields	≤0.05 %/mT
Temperature coefficient	≤0.0005% /°C