

## GF312D

### Handheld Three Phase Standard Reference Meter

*The Three Phase Reference Standard Meter (GF312D) is portable meter test equipment from GFUVE Electronics. The main objective of this device is to calibrate the errors for three phase & single phase energy meters i.e. the meter under test (MUT). The GF312D supports both static and electro-mechanical types of energy meters. It can also be used to measure the voltage, current, power, energy, power factor, harmonic etc of the meter under test. It has an 6 inch color LCD display, 24pcs keys that makes it easy for the user to operate the GF312D reference meter. It can be interfaced with the PC for data management analysis. It has the capability of storing test results.*

*The reference standard meter supports various current modes for checking energy meter error. The high accuracy (0.05) mode operates for direct current up to 20A. The clamp on CTs mode accuracy is better than 0.2 class. It can also be used to determine the current transformer ratio when tested simultaneously on the primary and secondary sides. It also supports flexible current probe for very high currents like 2000A or 3000A.*

### Features and Functions

1. Display vector diagram;
2. Measure CT variable ratio;
3. Display waveform of U and I;
4. Store and display measured data;
5. Measure frequency of power line;
6. Measure I(current) of three phase or single phase;
7. Measure U(voltage) of three phase or single phase;
8. Analyze and display content of harmonic of U and I;
9. Measure phase angle between voltage and current;
10. Measure power factor of three phase or single phase;
11. Measure active power of three phase or single phase;
12. Measure reactive power of three phase or single phase;
13. Measure apparent power of three phase or single phase;
14. Measure the ratio or lag-angle of low-voltage transformer.
15. Testing Three phase active or reactive electricity energy meter;
16. Calibrate three phase, single phase, active or reactive meter error;
17. Optional 5A, 20A, 100A, 200A, 500A, 1000A, 2000A, 3000A current clamp;
18. Adopt 32 bit ARM processor, multi-channel 16 bit precision A/D convertor, high resolution TFT color LCD;
19. Inner equipped with 0.01% wide-range current transformer and can be equipped with various type current clamps, wide range of measurement and high veracity.
20. Low consumption circuit design, high energy Li batter supply, intellectual power management software, which make the instrument can continuously work up to 10 hours.



## Parameters

Electrical parameters	
Accuracy class	0.05%, 0.1%, 0.2%
LCD display	6" TFT (640x480)
Power supply	220V±10%, 50/60Hz Li-polymer battery (size (mm): 110x51x16, nominal output voltage: 7.2V, capacity: 5000mAh) Power line supply (U1, UN), 85V-265V 50/60Hz
Communication port	RS232, USB
Test voltage	
Range	0-480V
Error	±0.05% (30V-480V) ±0.1% (0V-30V)
Harmonic	2 <sup>nd</sup> -63 <sup>rd</sup>
Test current	
Range (direct connection)	1mA-20A
Error (direct connection)	±0.05% (100mA-20A) ±0.1% (10mA-100mA)
Range (clamp CT)	10mA-3000A
Clamp CTs optional	5A, 100A, 200A, 500A, 1000A, 2000A, 3000A
Error (camp CT)	±0.2% (100mA-100A) ±0.5% (100A-3000A)
Harmonic	2 <sup>nd</sup> -63 <sup>rd</sup>
Power measure error	
Active power (direct connection)	±0.05% (0.1A-20A) ±0.1% (0.01A-0.1A)
Reactive power (direct connection)	±0.1% (0.1A-20A)
Energy measure error	
Active energy (direct connection)	±0.05% (0.1A-20A) ±0.1% (0.01A-0.1A)
Reactive energy (direct connection)	±0.1% (0.1A-20A)
Phase angle	
Range	0°-360°
Resolution	0.01°
Error	±0.05°
Frequency	
Range	45-65Hz
Resolution	0.001Hz
Error	0.002Hz

**Electrical parameters - continued**
**Pulse input**

Input channel	2
Input level	5-24V
Input frequency	Max. 2MHz

**Pulse output**

Energy constant	180000imp/kWh, 1800imp/kWh, 180imp/kWh
Pulse ratio	1:1
Output level	5V

**Function**

Vector diagram	Yes
Waveform	Yes
Energy accumulation	Yes
Test meter Type	1P2W, 1P3W, 3P3W, 3P4W
CT ratio test	Yes
CT PT programmable	Yes
Check wiring	Yes
smart optical sampler	1PC
Data storage	500sets
Communication with PC	Yes

**Mechanical parameters**

Instrument dimensions (W×H×D) (mm)	220×138×61
Instrument Weight (kg)	1.7
Carry case dimensions (W×H×D) (mm)	450×320×185
Carry case (kg)	8.5

**Environmental conditions**

Ambient temperature	-10°C to 55°C
Relative humidity	15%-90%
The Height of above sea level	≤3000m