

## GF333BM

### Modular Three Phase Reference Standard Meter

*The model GF333BM three phase reference standard meter is designed for one modular three phase multi-function reference energy meter, test three phase energy meters and single phase electricity meters error, work in the laboratory or meter test board, convenient energy meter test bench manufacturer for secondary development and Application. It can be as one of the most versatile high precision reference instruments. It can measure three phase voltage, current, frequency, phase angle, active power, reactive power, apparent power, energy and harmonic etc parameter, accuracy 0.02% and measurement range wide from 0 to 600V and 1mA to 160A. The modular reference meter has been used many in meter test bench suppliers.*

### Features

1. With RS232 port;
2. Vector diagram function;
3. Small size and light weight;
4. Waveform display function;
5. High accuracy up to 0.02% ;
6. Energy accumulating function;
7. 2nd-128th Harmonic analysis function;
8. Testing type: 3P4W, 3P3W, 1P2W, 1P3W;
9. Applied to energy meter test bench or meter test kit;
10. Internal pulse input port, testing meter's error directly;
11. Wide testing range: voltage 0V-600V, current 1mA-160A;
12. Modular design, embedded in the energy meter test system;
13. Testing mode: active power, reactive power, apparent power;
14. Wide range 0.005% precision current transformer technology;



### Application

1. AMI design center;
2. Energy meter R & D;
3. Electrical laboratory;
4. Watt-hour meter factory;
5. Colleges and Universities;
6. Meter test bench suppliers;
7. Metrological service center;
8. Laboratories of power utilities;
9. Electricity meter manufacturers;
10. Meter test equipment integrated factory;
11. National Metrology and testing department;

## Parameters

Electrical parameters	
Accuracy	0.05%, 0.04%, 0.02%
Voltage supply	220V±10% or 110V±10%, 50/60Hz
Power consumption	15VA
Voltage measurement	
Range(U1 U2 U3 UN)	0V-600V
Error	±0.02% (40V-600V), ±0.05% (5V-40V)
Display range	0.000000V-600.0000V
Harmonic	2 <sup>nd</sup> -128 <sup>th</sup>
Current measurement	
Range(I1 I2 I3)	1mA-60A; 1mA-120A; 1mA-160A; 1mA-200A
Error	±0.02% (0.1A-240A), ±0.05% (1mA-0.1A)
Display range	1.000000mA-240.0000A
Harmonic	2 <sup>nd</sup> -128 <sup>th</sup>
Power measurement	
Active power	±0.02% (0.1A-240A) ±0.05% (0.01A-0.1A) ±0.1% (0.001A-0.01A)
Reactive power	±0.05% (0.1A-240A), ±0.1% (0.001A-0.1A)
Apparent power	±0.05% (0.1A-240A), ±0.1% (0.001A-0.1A)
Energy error	
Active energy	±0.02% (0.1A-240A) ±0.05% (0.01A-0.1A) ±0.1% (0.001A-0.01A)
Reactive energy	±0.05% (0.1A-240A), ±0.1% (0.001A-0.1A)
Apparent energy	±0.05% (0.1A-240A), ±0.1% (0.001A-0.1A)
Phase measurement	
Range	0°-360°
Resolution	0.005°
Error	±0.02° or ±0.01°
Display range	0.0001°-359.9999°
Frequency measurement	
Range	40-70Hz
Display range	40.0000-70.0000
Resolution	0.0005Hz
Accuracy	0.001Hz

**Electrical parameters - continued**
**Power Factor measurement**

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

**Energy pulse**

High frequency output(CH)	25000Hz
Low frequency output(CL)	5000Hz
Pulse ratio	1:1
Output level	5V
Input level	5V
Input frequency	Max. 1MHz

**Communication port**

Communication port	RS232 or USB
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**Standard**

Standard	IEC 62053-21,22, 23; IEC 60736; IR46; ANSI C12.20-2022; JJG 597-2005; JJG596-2012; JJG 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	IP20
Declaration of conformity	CE & CNAS certified

**Mechanical parameters**

Dimensions (W×H×D) (mm)	280×200×85
Weight (kg)	5

**Environmental conditions**

Ambient temperature	-10°C to 45°C
Storage temperature	-20°C to 65°C
Relative humidity	10%-85%
Influence of external fields	≤0.05 %/mT
Temperature coefficient	≤0.0005% /°C