

## GF302D1S

### Portable Three Phase Electricity Meter Test System With Reference Meter and Current & Voltage Source

*The GF302D1S portable three phase electricity meter test system consists of an integrated 0.05% three-phase current and voltage source and a three-phase electronic reference meter of accuracy class 0.02. Characteristic features of the GF302D1S are its wide measuring range from 0 to 3\*120A and 0 to 3\*600V, high accuracy and high tolerance to unwanted external influences.*

*The GF302D1S portable meter test system allows the monitoring of meter installations as well as analysis of the local mains conditions when it is as portable reference working standard. The equipment offers high functionality combined with an excellent menu guided operation via built-in keyboards and colored 7" touch LCD-display. Voltage & current harmonics output from 2 to 63 times. This model portable meter test system can be programmable by PC, automatic generation of energy meter error test report.*

## Functions

1. Testing phase angle meter;
2. Testing power factor meter;
3. Measuring the distortion factor;
4. As three phase reference standard;
5. User friendly menu guided operation;
6. Measuring mechanical meter and electric meter;
7. As three phase voltage source and current source;
8. Measuring frequency, phase shift and power factor;
9. Easy verification and analysis of meter installations;
10. Automatic operation without need of an external PC;
11. Testing single phase/ three phase panel power meter;
12. Testing single phase/ three phase ammeter and voltmeter;
13. Especially configured USB stick for storage of customer data;
14. Energy dosing with built-in current source and voltage source;
15. Testing all kinds of energy meter in 1P2W, 1P3W, 3P3W, 3P4W;
16. Harmonic spectrum analysis for voltage and current up to the 63rd order;
17. Power and energy measurements for active, reactive and apparent power;
18. Vector diagram display and phase sequence indication on integrated colored screen;



## Features

1. Weight 23Kg;
2. With 120A clamp on ct;
3. 7 inch TFT touch screen;
4. 1P2W, 1P3W, 3P3W, 3P4W;
5. Accuracy class 0.02 or 0.05;
6. Test by automatic or manual;
7. Start testing and creep testing;
8. Used on site or in the laboratory;
9. 0-120A/0-600V/40-70Hz/0-360.000;
10. The test Scheme can be programmed;
11. Power factor from -1.00000 to 1.00000;
12. Recorder 10000 sets energy meter data;
13. 5A, 20A, 120A, 1000A, 3000A clamp optional;
14. Overload, short circuit, open circuit protection;
15. With 2-63rd harmonics measurement function;
16. Reference standard and power source integrated;
17. imp/kWh, imp/kvarh, imp/Wh, imp/varh etc optional;

## Parameters

Electrical parameters	
Accuracy	0.02%, 0.05%
Power Supply	One Phase AC 85-265V, frequency 50/60Hz.
Voltage measurement	
Range	0.00-600V
Resolution	0.001V
Error	±0.02% (30V-600V) ±0.05% (0.1V-30V)
Harmonic	2 <sup>nd</sup> -63 <sup>st</sup>
Current measurement	
Range (direct connection)	1mA-120A
Resolution	0.1mA
Error (direct connection)	±0.02% (10mA-120A) ±0.05% (1mA-10mA)
Harmonic	2 <sup>nd</sup> -63 <sup>st</sup>
Clamp on CTs(optional)	5A,20A, 100A, 200A, 500A, 1000A, 2000A, 3000A
Accuracy	0.2%
Power measure error	
Active power (direct connection)	±0.02% (0.01A-120A) ±0.05% (0.001A-0.01A)
Reactive power (direct connection)	±0.05% (0.1A-120A)
Active power (clamp on CTs)	±0.2% (0.001A-120A)
Reactive power (clamp on CTs)	±0.5% (0.001A-120A)

## Electrical parameters - continued

### Energy measure error

Active energy (direct connection)	±0.02% (0.01A-120A) ±0.05% (0.001A-0.01A)
Reactive energy (direct connection)	±0.05% (0.01A-120A)
Active energy (clamp on CTs)	±0.2% (0.001A-120A)
Reactive energy (clamp on CTs)	±0.5% (0.001A-120A)

### Phase angle measurement

Range	0°-360°
Resolution	0.005°
Error	±0.015°

### Frequency Measurement

Range	40-70Hz
Resolution	0.0005Hz
Error	0.001Hz

### Power factor measurement

Range	-1.0 ~ 0 ~ +1.0
Resolution	0.0001
Error	0.0005

### AC Voltage Source Output

Range(U1,U2,U3)	0-500V
Adjustment range	(0-120)%RG <sup>(1)</sup>
Adjustment fineness	0.01%RG, 0.1%RG, 1%RG, 10%RG as optional.
Stability	0.01%/120s
Distortion	0.3% (Non-capacitive load)
Output load	each phase 25VA or 50VA
Accuracy	0.05%RG

### AC Current Source Output

Range(I1,I2,I3)	0-120A;
Adjustment range	(0-100)%RG
Adjustment fineness	0.01%RG, 0.1%RG, 1%RG, 10%RG as optional.
Stability	<0.01%/120s
Distortion	≤0.3% (Non-capacitive load)
Max Output load	50VA or 100VA;
Accuracy	0.05%RG

**Electrical parameters - continued**
**Power output**

Active power output stability	<0.01%RG/120s
Reactive power output stability	<0.02%RG/120s
Active power output accuracy	0.05%RG
Reactive power output accuracy	0.1%RG

**Phase Output**

Output adjustment range	0°-359.999°
Output adjustment fineness	10, 1, 0.1, 0.01 as optional.
Resolution	0.01°
Accuracy	0.02°

**Power Factor Output**

Adjustment range	-1 ~ 0 ~ 1
Resolution	0.0001
Measurement accuracy	0.0005

**Frequency Output**

Range	40Hz-70Hz
Resolution	0.001Hz
Accuracy	0.002Hz

**Voltage /Current/Harmonic Output**

Harmonic number	2-63times
Harmonic content	0-40%
Harmonic phase	0-359.99
Harmonic setting accuracy	(10%±0.1%)RD <sup>(2)</sup>

**Energy Pulse Output**

Energy pulse type	active pulse, reactive pulse
Active Energy pulse output	5V, 10mA

**Energy Pulse Input**

Energy pulse type	support active and reactive pulse, the highest frequency power pulse input is 2MHz.
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**Display**

Color LCD	7"STN (800×480), touch
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**Communication Port**

Communication Port	RS232, USB2.0
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## Electrical parameters - continued

### Function

Vector diagram	Yes
Waveform	Yes
Energy register test	Yes
CT ratio test	Yes
CT PT burden test	Yes
Local parameter input	Yes
Wiring emulation	Yes
Self-calibration	Yes
Recorder check	Yes
Data storage	Yes
GPS	Yes, optional
Data storage qty	10000
External extend memory	Yes
Communication with PC	Yes
Upload data	Yes
Keyboard	Yes

### 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; EN 50470
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### Safety

Isolation protection	IEC 61010-1:2001
Measurement Category	300 V CAT III, 600 V CAT II
Degree of protection	IP42
Declaration of conformity	CE & CNAS certified

## Mechanical parameters

Dimensions (W×D×H) (mm)	570x416x282
Weight (kg)	25

## Environmental conditions

Ambient temperature	-25°C to +50°C
Storage temperature	-30°C to +65°C
Relative humidity	15%-95%

(1) RG means range, the same as below;

(2) RD means the setted harmonic content, harmonic can be a single output, also multiple output.