

GF302D3

Portable three phase energy meter test bench

The GF302D3 portable three phase energy meter test bench consists of an integrated three phase 120A current source and 600V voltage source and a class 0.02 three phase electronic reference standard meter.

The energy meter test bench is particularly designed for analysis of complete metering installations and local mains conditions. The meter test bench offers high functionality combined with an excellent menu guided operation via built-in thirty keys and colored 7" touch LCD-display. It can auto & manual test all kinds of energy meter error. Using on site or in the laboratory. It can preset a variety of test schemes for testing energy meter.

Application

- 1. Power plant;
- 2. Electrical laboratory;
- 3. Energy meter R & D;
- 4. Watt-hour meter factory;
- 5. Metrological service center;
- 6. Electricity power bureau & power company;
- 7. National Metrology and testing department;
- 8. Electrical Department of industrial and mining enterprises;



Features

- 1. Min current output 1mA;
- 3. 4 quadrant measurement;
- 5. Predefined multiple load points;
- 7. User friendly menu guided operation;
- 9. Verification of the energy registration;
- 11. 1P2W, 1P3W, 3P3W, 3P4W can be set;
- 8. Verification of the load conditions on metering installation;
 - 10. Programmable many kinds of testing energy meter schemes;

2. Reference meter and power source integration;

4. Easy verification and analysis of meter installations;

6. Automatic operation without need of an external PC;

- 12. Generation of harmonics in current and voltage up to the 63nd;
- 13. Automatic testing mechanical meter and electronic meter error;
- 14. Voltage, current, frequency, phase angle, power factor, harmonics can be regulated;
- 15. Vector diagram display and phase sequence indication on integrated colored screen;
- 16. Especially configured USB stick for storage of customer data and measurement results;



Parameters

Single phase AC 85-265V, frequency 50/60Hz. AC Voltage Output Range(U1,U2,U3) 57.7V, 100V, 220V, 380V; max 500V or 69.3V, 120V, 240V, 480V(optional); max 600V and djustment range Adjustment fineness 0.01%RG, 0.1%RG, 1%RG, 10%RG as optional. Stability 0.02% (Non-capacitive load) Cutput load Accuracy 0.05%RG or 0.02%RG ACcurrent Output Range(I1,I2,I3) 200mA, 1A, 5A, 20A, 100A; max 120A Adjustment fineness 0.01%RG, 0.1%RG, 10%RG as optional. Adjustment fineness 0.01%RG, 0.1%RG, 10%RG as optional. Adjustment fineness 0.01%RG, 0.1%RG, 10%RG as optional. Accuracy 0.05%RG or 0.02%RG Accur	Electrical parameters	
AC Voltage Output Range(U1,U2,U3) 57.7V,100V,220V,380V: max 500V or 69.3V, 120V, 240V, 480V(optional); max 600V Adjustment range (0-120)%RG ^[1] 0.01%RG, 0.1%RG, 10%RG as optional. Stability 0.101%/120S Olistortion 0.2% (Non-capacitive load) each phase 25VA or 50VA Accuracy 0.05%RG or 0.02%RG ACCUrrent Output Range(I1,I2,I3) 200mA, 1A, 5A, 20A, 100A; max 120A Adjustment range (0-120)%RG Adjustment fineness 0.01%RG, 0.1%RG, 10%RG as optional. Stability 0.01%/120S Olistortion 20.2% (Non-capacitive load) Output load Accuracy 0.05%RG or 0.02%RG Accuracy 0.00° Accuracy 0.00°	Accuracy	0.02%, 0.05%
S7.7V, 100V, 220V, 380V; max 500V or 69.3V, 120V, 240V, 480V(optional); max 600V or 69.3V, 120V, 240V, 24	Power Supply	Single phase AC 85-265V, frequency 50/60Hz.
or 69.3V, 120V, 240V, 480V(optional); max 600V Adjustment range	AC Voltage Output	
Adjustment range Adjustment fineness Adjustment fineness O.01%RG, 0.1%RG, 1%RG, 10%RG as optional. O.01%/120s O.2% (Non-capacitive load) Dutput load Accuracy O.05%RG or 0.02%RG ACCurrent Output Brange (11,12,13) Adjustment range (0-120)%RG Adjustment fineness O.01%RG, 0.1%RG, 1%RG, 10%RG as optional. Adjustment fineness O.01%RG, 0.1%RG, 1%RG, 10%RG as optional. Output load Accuracy O.05%RG or 0.02%RG Accuracy O.01%/120s Output load Accuracy O.05%RG or 0.02%RG Power Output Accuracy O.05%RG or 0.02%RG Power Output Accuracy O.05%RG or 0.02%RG	Range(U1,U2,U3)	
Adjustment fineness 0.01%RG, 0.1%RG, 1%RG, 10%RG as optional. 0.01%/120s 0.02% (Non-capacitive load) 0.02w (Non-capacitive load) 0.02w (Non-capacitive load) 0.02w (Non-capacitive load) 0.05%RG or 0.02%RG ACCurrecty 0.05%RG or 0.02%RG ACCurrent Output Range(I1,I2,I3) 200mA, 1A, 5A, 20A, 100A; max 120A Adjustment range (0-120)%RG Adjustment fineness 0.01%RG, 0.1%RG, 1%RG, 10%RG as optional. Stability 0.01%/120s 0.01%/120s 0.02% (Non-capacitive load) 0.01wput load 50VA or 100VA or 200VA 0.05%RG or 0.02%RG Power Output Active power output stability 0.01%RG/120s Reactive power output stability 0.02%RG/120s Active power measuring accuracy 0.05%RG or 0.02%RG Apparent power measuring accuracy 0.05%RG or 0.02%RG Phase Output Output adjustment range 0°-359.999° Output adjustment fineness 10, 1, 0.1, 0.01 as optional. Accuracy 0.02° Power Factor Adjustment range 41~0~1 Adjustment range -1~0~1 Accuracy Power Factor Adjustment range -1~0~1 Accuracy O.0001		or 69.3V, 120V, 240V, 480V(optional); max 600V
Stability 0.01%/120s Distortion 0.2% (Non-capacitive load) Dutput load each phase 25VA or 50VA Accuracy 0.05%RG or 0.02%RG AC Current Output Range(I1,I2,I3) 200mA, 1A, 5A, 20A, 100A; max 120A Adjustment range (0-120)%RG Adjustment fineness 0.01%RG, 0.1%RG, 1%RG, 10%RG as optional. Stability <0.01%/120s Distortion <0.02% (Non-capacitive load) Dutput load 50VA or 100VA or 200VA Accuracy 0.05%RG or 0.02%RG Power Output Active power output stability <0.01%RG/120s Active power measuring accuracy 0.05%RG or 0.02%RG Active power measuring accuracy 0.1%RG Apparent power measuring accuracy 0.1%RG Apparent power measuring accuracy 0.05%RG or 0.02%RG Phase Output Dutput adjustment range 0°-359.999° Dutput adjustment fineness 10, 1, 0.1, 0.01 as optional. Accuracy 0.02° Power Factor Adjustment range -1~0~1 Accuracy 0.0001	Adjustment range	(0-120)%RG ⁽¹⁾
O.2% (Non-capacitive load) Poutput load Power Output Poutput load Pou	Adjustment fineness	0.01%RG, 0.1%RG, 1%RG, 10%RG as optional.
Poutput load Accuracy ACCurrent Output Range(I1,I2,I3) Adjustment range Adjustment fineness Accuracy Dutput load Accuracy Accuracy Adjustment fineness Adjustment fineness Accuracy Distortion Cutput load Accuracy Accuracy Accuracy Dosyng or 0.02%RG Accuracy Accuracy Accuracy Dosyng or 0.02%RG Accuracy	Stability	0.01%/120s
Accuracy AC Current Output Range(I1,I2,I3) Adjustment range Adjustment fineness Adjustment fineness Acquiracy Acquiracy Distortion Cutput load Accuracy Accuracy Accuracy Active power output stability Active power measuring accuracy Acquiracy Apparent power measuring accuracy Apparent power measuring accuracy Cutput adjustment range O'-359.999° Cutput adjustment fineness Accuracy O'-359.999° Accuracy O'-359.999° Accuracy O'-359.999° Accuracy O'-359.999° O'-359.	Distortion	0.2% (Non-capacitive load)
AC Current Output Range(I1,I2,I3) 200mA, 1A, 5A, 20A, 100A; max 120A Adjustment range (0-120)%RG Adjustment fineness 0.01%RG, 0.1%RG, 1%RG, 10%RG as optional. Stability <0.01%/120s Output load 50VA or 100VA or 200VA Accuracy 0.05%RG or 0.02%RG Power Output Active power output stability <0.01%RG/120s Active power measuring accuracy 0.05%RG or 0.02%RG Reactive power measuring accuracy 0.1%RG Apparent power measuring accuracy 0.1%RG Apparent power measuring accuracy 0.05%RG or 0.02%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 Adjustment range -1~0~1 Resolution 0.0001	Output load	each phase 25VA or 50VA
Range(I1,I2,I3) Adjustment range Adjustment fineness Adjustment fineness Adjustment fineness Adjustment fineness O.01%RG, 0.1%RG, 1%RG, 10%RG as optional. Stability O.01%/120s Output load Accuracy O.05%RG or 0.02%RG Power Output Active power output stability Active power measuring accuracy Apparent power measuring accuracy Apparent power measuring accuracy O.05%RG or 0.02%RG Phase Output Output adjustment range O'-359.999° Output adjustment fineness Accuracy O.02° Power Factor Adjustment range -1 ~ 0 ~ 1 Resolution O.0001	Accuracy	0.05%RG or 0.02%RG
Adjustment range Adjustment fineness O.01%RG, 0.1%RG, 10%RG as optional. Stability O.01%/120s Output load Accuracy O.05%RG or 0.02%RG Power Output Active power output stability Active power measuring accuracy Apparent power measuring accuracy Apparent power measuring accuracy O.05%RG or 0.02%RG Phase Output Output adjustment fineness O.01%RG/120s Output adjustment fineness O.05%RG or 0.02%RG O.05%RG or 0	AC Current Output	
Adjustment fineness 0.01%RG, 0.1%RG, 10%RG as optional. Stability 0.01%/120s 0.02% (Non-capacitive load) 50VA or 100VA or 200VA Accuracy 0.05%RG or 0.02%RG Power Output Active power output stability Active power measuring accuracy Active power measuring accuracy Apparent power measuring accuracy 0.05%RG or 0.02%RG Apparent power measuring accuracy 0.05%RG or 0.02%RG Apparent adjustment range 0°-359.999° Output adjustment fineness 10, 1, 0.1, 0.01 as optional. Resolution Accuracy Power Factor Adjustment range -1 ~ 0 ~ 1 Resolution 0.0001	Range(I1,I2,I3)	200mA, 1A, 5A, 20A, 100A; max 120A
Stability 	Adjustment range	(0-120)%RG
Distortion	Adjustment fineness	0.01%RG, 0.1%RG, 1%RG, 10%RG as optional.
Dutput load SovA or 100VA or 200VA Accuracy 0.05%RG or 0.02%RG Power Output Active power output stability Active power measuring accuracy Active power measuring accuracy Active power measuring accuracy Apparent power measuring accuracy Dutput adjustment range O'-359.999° Dutput adjustment fineness 10, 1, 0.1, 0.01 as optional. Resolution Accuracy Power Factor Adjustment range -1 ~ 0 ~ 1 Resolution O.0001	Stability	<0.01%/120s
Accuracy Power Output Active power output stability Active power measuring accuracy Dutput power measuring accuracy O.05%RG or 0.02%RG Phase Output Output adjustment range O°-359.999° Output adjustment fineness 10, 1, 0.1, 0.01 as optional. Accuracy O.02° Power Factor Adjustment range -1~0~1 Resolution O.0001	Distortion	≤0.2% (Non-capacitive load)
Power Output Active power output stability	Output load	50VA or 100VA or 200VA
Active power output stability Reactive power output stability Active power measuring accuracy Active power measuring accuracy Reactive power measuring accuracy Apparent power measuring accuracy Phase Output Output adjustment range Output adjustment fineness 10, 1, 0.1, 0.01 as optional. Resolution Accuracy Power Factor Adjustment range -1 ~0 ~1 Resolution 0.0001	Accuracy	0.05%RG or 0.02%RG
Reactive power output stability Active power measuring accuracy Reactive power measuring accuracy Reactive power measuring accuracy Apparent power measuring accuracy Phase Output Output adjustment range Output adjustment fineness Resolution Accuracy Power Factor Adjustment range -1 ~0 ~1 Resolution 0.0001	Power Output	
Active power measuring accuracy Reactive power measuring accuracy Apparent power measuring accuracy Phase Output Output adjustment range Output adjustment fineness 10, 1, 0.1, 0.01 as optional. Resolution Accuracy Output adjustment Output adjustment fineness 10, 1, 0.1, 0.01 as optional. Output adjustment fineness 10, 1, 0.01 as optional. Output adjustment fineness 10, 0.01° Output adjustment fineness 10, 0.01° Output adjustment fineness 10, 0.01° Output adjustment fineness 10, 0.001° Output adjustment fineness 10, 0.00	Active power output stability	<0.01%RG/120s
Reactive power measuring accuracy Apparent power measuring accuracy Phase Output Output adjustment range O°-359.999° Output adjustment fineness 10, 1, 0.1, 0.01 as optional. Resolution Accuracy Power Factor Adjustment range -1 ~ 0 ~ 1 Resolution 0.0001	Reactive power output stability	<0.02%RG/120s
Apparent power measuring accuracy Phase Output Output adjustment range O°-359.999° Output adjustment fineness 10, 1, 0.1, 0.01 as optional. Resolution Accuracy Power Factor Adjustment range -1~0~1 Resolution 0.0001	Active power measuring accuracy	0.05%RG or 0.02%RG
Phase Output Output adjustment range Output adjustment fineness 10, 1, 0.1, 0.01 as optional. Resolution Output adjustment fineness 0.01° Output adjustment fineness 0.02° Power Factor Adjustment range -1~0~1 Resolution 0.0001	Reactive power measuring accuracy	0.1%RG
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 Adjustment range -1~0~1 Resolution 0.0001	Apparent power measuring accuracy	0.05%RG or 0.02%RG
Output adjustment fineness 10, 1, 0.1, 0.01 as optional. Resolution 0.01° Accuracy 0.02° Power Factor Adjustment range -1 ~0 ~1 Resolution 0.0001	Phase Output	
Resolution 0.01° Accuracy 0.02° Power Factor Adjustment range -1~0~1 Resolution 0.0001	Output adjustment range	0°-359.999°
Accuracy 0.02° Power Factor Adjustment range -1~0~1 Resolution 0.0001	Output adjustment fineness	10, 1, 0.1, 0.01 as optional.
Power Factor Adjustment range -1 ~ 0 ~ 1 Resolution 0.0001	Resolution	0.01°
Adjustment range -1 ~ 0 ~ 1 Resolution 0.0001	Accuracy	0.02°
Resolution 0.0001	Power Factor	
	Adjustment range	-1~0~1
Measurement accuracy 0.0005	Resolution	0.0001
	Measurement accuracy	0.0005





Frequency Output	
Adjustment range	40Hz-70Hz
Output adjustment fineness	5Hz, 1Hz, 0.1Hz, 0.01Hz as optional.
Resolution	0.001Hz
Accuracy	0.002Hz
Voltage /Current/Harmonic Setting Outp	ut
Harmonic number	2-63times
Harmonic content	0-40%
Harmonic phase	0-359.99
Harmonic setting accuracy	(10%±0.1%)RD ⁽²⁾
Power Energy Measurement Error	
Active power energy	0.05%RG or 0.02%RG
Reactive power energy	0.1%RG
Power Pulse Output	
Power pulse type	active pulse, reactive pulse
Active power pulse output	5V, 10mA
Power Pulse Input	
Energy pulse type	support active and reactive pulse, the highest frequency power pulse input is 200K.
Communication Port	
Communication Port	RS232, USB2.0
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)	445x460x158
Weight (kg)	18
Environmental conditions	
Ambient temperature	-10°C to +40°C
Relative humidity	35%-85%

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