

GF312D1

Three Phase Energy Meter Calibrator

The instrument is a precision AC energy meter testing instrument, mainly used to test three phase energy meter error on site and measure all various of AC parameters.

Features

1. Three phase active or reactive electricity energy meter
2. Calibrate three phase, single phase, and active or reactive meter error
3. Measure U(voltage) of three phase or single phase
4. Measure I(current) of three phase or single phase
5. Measure active power of three phase or single phase
6. Measure reactive power of three phase or single phase
7. Measure apparent power of three phase or single phase
8. Measure power factor of three phase or single phase
9. Measure phase angle between voltage and current
10. Measure frequency of power line
11. Display vector diagram
12. Display waveform of U and I
13. Analyze and display content of harmonic of U and I
14. Measure 2-64 harmonic of U, I
15. Store and display measured data
16. Optional 5A, 20A, 100A, 500A, 1000A, 2000A, 3000A current clamp
17. Measure CT variable ratio
18. Measure the ratio or lag-angle of low-voltage transformer
19. Adopt 32 bit ARM processor, multi-channel 16 bit precision A/D convertor, high resolution TFT color LCD
20. 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
21. 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

1. Electrical parameters

Accuracy class	0.05%, 0.1%
Display	6" TFT (640×480)

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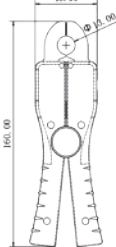
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 Челябинск (351)202-03-61
 Череповец (8202)49-02-64
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1. Electrical parameters-continued

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
Test voltage	
Range	Phase to Netural 0-480V (Phase to Phase 0-830V)
Error	±0.05% (30V-480V) ±0.1% (5V-30V)
Voltage measurement temperature drift	< 8 x 10 E-6/K
Voltage measurement relative humidity drift	< 8 x 10 E-6/RH
Voltage measurement stability	< 50 x10 E-6
Voltage measurement long term stability	< 80 x 10 E-6/Year
Harmonic	2 nd -64 st
Test current	
Range (direct connection)	0-12A
Error (direct connection)	±0.05% (100mA-12A) ±0.1% (10mA-100mA)
Range (clamp CT)	10mA-120A
Clamp CT	  <p>Model: Q13 Test range:1mA-120A Accuracy:0.1% Ratio:1000:1 Internal diameter:13mm External diameter:33mm Lead cable:2.5m</p>
Three phase color label	L1=Red,L2=Yellow,L3=Blue
Error (camp CT)	±0.1% (100mA-120A)
Current measurement temperature drift	< 8 x 10 E-6/K @ 10mA-120A
Current measurement relative humidity drift	< 8 x 10 E-6/RH@ 10mA-120A
Current measurement stability	< 50 x10 E-6
Current measurement long term stability	< 80 x 10 E-6/Year
Harmonic	2 nd -64 st
Power & Energy measure error	
Active power (direct connection)	±0.05% (0.1A-12A) ±0.1% (0.01A-0.1A)
Reactive power (direct connection)	±0.1% (0.1A-12A)

1. Electrical parameters-continued

Energy measure error

Active energy (direct connection)	±0.05% (0.1A-12A) ±0.1% (0.01A-0.1A)
Reactive energy (direct connection)	±0.1% (0.1A-12A)
Power/energy measurement temperature drift	< 15 x 10 E-6/K
Power/energy measurement relative humidity drift	< 12 x 10 E-6/RH@ 10mA-120A
Power/energy measurement stability	< 100 x 10 E-6
Power/energy measurement long term stability	< 160 x 10 E-6/Year
Error display	5 digits with minimum three decimal places XX.XXX%

Phase angle

Range	0°-360°
Resolution	0.01°
Error	±0.05°

Frequency

Range	40-70Hz
Resolution	0.001Hz
Error	0.002Hz

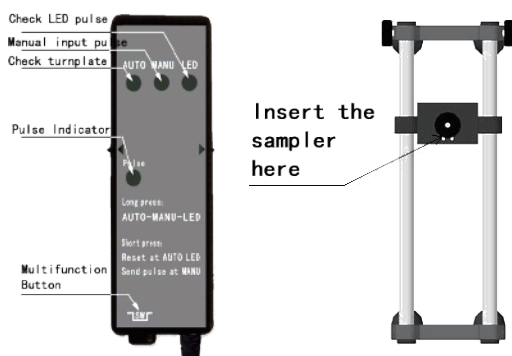
Pulse input

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
Pulse frequency	Standard 400Hz-1KHz, customized max 10KHz

Scanning head



The sampler is equipped with a bracket which can clip/install on the tested electronic and electromechanical meters, and the sampler can insert to the 'orifice/slot' in the center of the bracket.

There are 3 status LED indicator:

- [AUTO] – scan the turn-plate of the energy meter
- [MANU] – Manual input pulse
- [LED] – Receive the LED energy pulse

1. Electrical parameters-continued

Function Sensitivity can be intelligently adjusted according to ambient light intensity to ensure accuracy measurement.

Function	
Vector diagram	Yes
Waveform	Yes
Energy accumulation	Yes
Communication with PC	Yes
Overload protection	Yes

2. Cable and Accessories

Test Cable	Voltage test cable 1SET Cable Length:2m (R,Y,B,Black) Current test cable 1SET Cable Length:2m (R,Y,B,Black)
Plug	Pin type 1SET (4black,2Red,2Yellow,2Green) 'U' type 1SET (4black,2Red,2Yellow,2Green) 'Q' type 1SET (4black,2Red,2Yellow,2Green) Crocodile type 1SET (1Black,1Red,1Yellow,1Green)
Accessories Bag	Yes

3. Mechanical parameters

Instrument dimensions (W×H×D) (mm)	245×162×60
Instrument Weight (kg)	1.8
Carry case dimensions (W×H×D) (mm)	450×320×185
Carry case (kg)	10.6

4. Environmental conditions

Ambient temperature	-10°C to 55°C
Relative humidity	15%-95%
Environmental protection level	IP51

5. Standard

Isolation protection	IEC 61010-1:2001
Energy measurement	IEC 60736
Reference standard	IEC 62052-11 IEC62053-21 IEC62053-22 & IEC62053-23 IEC61010-1:2001

6. Calibration and maintenance

Warranty	5 years
Calibration	Lifelong free calibration service
Recommended calibration interval	Every two years

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