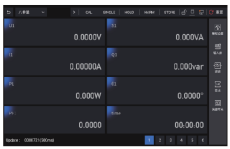
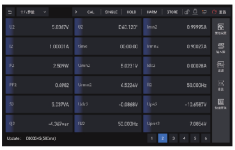
Multi-channel High Precision Power Analyzer
ANPA3000(F)

Display interface

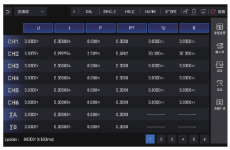
4-item display



8-item display



18-item display



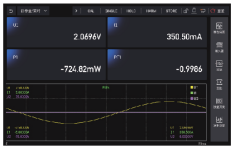
Full value display

List display

Waveform Display - Instantaneous Graph

Waveform Display - Trend Graph

Waveform Display - Vector Graph



Split screen display

Features

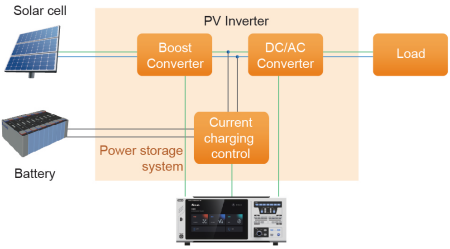
- Six-channel synchronous power analysis.
- **Basic accuracy:** 0.03%×Reading+0.05%×Range.
- **Measurement bandwidth:** DC, 0.5Hz-1MHz.
- **Maximum voltage:** 1000V (DC1500V).
- **Rich specifications:** 30A (standard) 50A/5A（optional）, standard BNC interface, and optional sensors.
- **LCD:** full touch screen experience, customizable display interface items, and multiple waveform displays.
- **Data storage:** customizable storage items, CSV format export, and on-device screenshot saving.
- **Perfect size:** standard 4U height, compliant with system integration requirements.

Application

- Power, efficiency, and harmonic analysis before and after aging in the production process of photovoltaic inverters.
- Measurement of electric vehicle, OBC, and charging piles electrical performance.
- Power consumption and mechanical efficiency tests of motor benches and variable frequency motors.
- Analysis of power, harmonics, and surge currents in switching power supplies.
- Harmonic analysis of power electronics and transformers.

Photovoltaic inverter power measurement

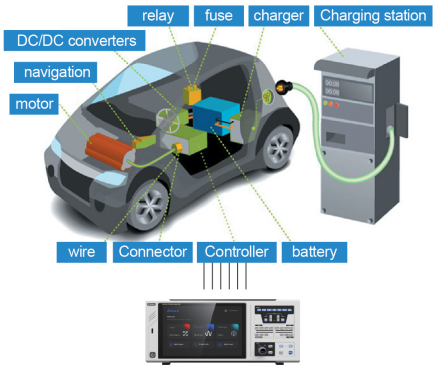
- Comply with testing specification for Photovoltaic Grid-connected Inverter Standard GB/T 37409-2019.
- Voltage range 0-1000V (DC1500V).
- Current range 0-50A, or current sensor.
- Simultaneous measurement of input, output (single-phase and three-phase) power, and power factor.
- Automatic efficiency calculation.
- Analysis of up to 500 times harmonics and distortion.
- Bidirectional power measurement for buying and selling electricity.



• Represents the measurement point and input of the power analyzer.

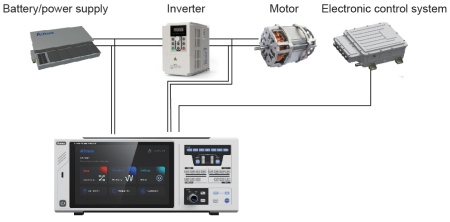
Electric vehicle electrical performance measurement

- Multi-channel, capable of simultaneously detecting multiple parameters. Supports bench tests, OBC, charging piles efficiency tests, battery charge and discharge performance, power conversion performance, motor performance, etc.
- AC/DC, maximum current 50A, expandable with larger current sensors.
- High accuracy, basic accuracy 0.1%, minimum power resolution 0.1mW.
- Can measure instantaneous effective value, average value, peak value of AC/DC signals, energy consumption, etc.



Motor bench and variable frequency motor measurement

- Complies with GB12668 standard.
- Power bandwidth DC. 0.5Hz-1MHz.
- Has current sensors with a current range of 0-50A/30A/5A.
- Simultaneously measures input and output power.
- Analysis of 500 times harmonics and distortion.



Various power supply and UPS power measurement

- Has current sensors with a current range of 0-50A/30A/5A.
- Power bandwidth DC, 0.5Hz-1MHz.
- Simultaneously measures input and output (single-phase and three-phase) power, and monitors battery charge and discharge.
- Automatic efficiency calculation.

Channel configuration

Wiring method	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6
Single-phase photovoltaic inverter	1P2WDC	1P2WAC	1P2W	1P2W	1P2W	1P2W
Three-phase photovoltaic inverter	3P3W/3V3A/3P4WAC			1P2WDC	1P2W	1P2W
Electric vehicle	1P2W			1P2W		
Inverter	3P3W/3V3A/3P4W			3P3W/3V3A/3P4W		

Specifications

Model	ANPA3000(F)	
Current specifications	30A (optional 50A 5A)	
Wiring method	1P3W (single-phase 3-wire), 3P3W (3-phase 3-wire, 2 voltage 2 current). 3V3A (3-phase 3-wire, 3 voltage 3 current), 3P4W (3-phase 4-wire)	
Input impedance per phase	Voltage: Approximately 10MΩ; current direct input: 30A: approximately 10mΩ 50A: approximately 4mΩ 5A: approximately 100mΩ; current sensor input: approximately 1MΩ	
Sampling rate	400kS/s	
Full range peak factor	3 or 6	
Voltage rated range (direct input)	15/30/60/100/150/300/600/1,000* [V] (peak factor 3) 7.5/15/30/50/75/150/300/500* [V] (peak factor 6) *1,000V full range peak factor is 1.5	
Current rated range (direct input)	30A: 1/2/5/10/20/30* [A] (peak factor 3) 50A: 1/2/5/10/20/50* [A] (peak factor 3) 5A: 100m/200m/500m/1/2/5* [A] (peak factor 3) 30A: 500m/1/2.5/5/10/15* [A] (peak factor 6) 50A: 500m/1/2.5/5/10/25*[A](peak factor 6) 5A: 50m/100m/250m/0.5/1/2.5	
Current rated range (sensor input)	200m/500m/1/2/5/10 [V] (peak factor 3) 100m/250m/500m/1/2.5/5 [V] (peak factor 6)	
Voltage/current measurement range	(1%-110%)×Range The 1A range of the 50A board card is (5%-110%)×Range	
Power factor range	±(0.0001-1.0000)	
Voltage measurement accuracy	DC	±(0.05%×Reading+0.05%×Range)
	0.5Hz≤f<45Hz	±(0.03%×Reading+0.05%×Range)
	45Hz≤f≤66Hz	±(0.03%×Reading+0.05%×Range)
	66Hz<f≤1kHz	±(0.1%×Reading+0.1%×Range)
	1kHz<f≤50kHz	±(0.3%×Reading+0.1%×Range)
	50kHz<f≤100kHz	±(0.6%×Reading+0.2%×Range)
	100kHz<f≤500kHz	±[(0.006×f)%×Reading+0.5%×Range]
	500kHz<f≤1MHz	±[(0.022×f-8)%×Reading+1%×Range]
Current measurement accuracy	DC	±(0.05%×Reading+0.05%×Range)
	0.5Hz≤f<45Hz	±[(0.03%×Reading+0.05%×Range)+(2μA*)]
	45Hz≤f≤66Hz	±[(0.03%×Reading+0.05%×Range)+(2μA*)]
	66Hz<f≤1kHz	±(0.1%×Reading+0.1%×Range)
	1kHz<f≤50kHz	±(0.3%×Reading+0.1%×Range)
	50kHz<f≤100kHz	±(0.6%×Reading+0.2%×Range)
	100kHz<f≤500kHz	±[(0.006×f)%×Reading+0.5%×Range]
	500kHz<f≤1MHz	±[(0.022×f-8)%×Reading+1%×Range]

Any changes to the above parameter specifications will not be notified separately.

Specifications

Model	ANPA3000(F)	
Active power measurement accuracy	DC	±(0.05%×Indicating value+0.05%×range)
	0.5Hz≤f<45Hz	±(0.08%×Indicating value+0.1%×Range)
	45Hz≤f≤66Hz	±(0.05%×Indicating value+0.05% of range)
	66Hz<f≤1kHz	±(0.2%×Indicating value+0.1%×Range)
	1kHz<f≤50kHz	±(0.3%×Indicating value+0.2%×Range)
	50kHz<f≤100kHz	±(0.7%×Indicating value+0.3%×Range)
	100kHz<f≤500kfHz	±[(0.02×f)%×Reading+1%×Range]
	500kHz<f≤1MHz	±[(0.04×f)%×Reading+3%×Range]
Active power measurement range	0.02W-6.6kW/phase @ 220V, PF=0.01-1 (30A board card)	
Highest resolution of active power	30A/50A: 1mW; 5A:0.1mW	
Frequency measurement range	DC, 0.5Hz -1MHz	
Frequency measurement accuracy	±0.1%×Indicating value	
Harmonic measurement	10Hz-2.6kHz, maximum 500th harmonic content, total distortion	
Energy measurement range	0-99999MWh (resolution: 1mWh/0.01mAh)	
Energy measurement accuracy	±0.1%×Indicating value	
Energy measurement timing	9999 hours 59 minutes 59 seconds	
Filter function	Voltage line, current line, and frequency filters at 500Hz, 5.5kHz, and 50kHz	
Voltage and current ratio range	1.00-50000.00	
External input ratio	0.10-100.00	
Data update cycle	50m/100m/200m/500m/1/2/5/10[s]	
Control interface	Test cycle synchronization interface (compatible with trigger lock function), standard configuration: RS-232, LAN; optional: RS-485	
Communication protocol	MODBUS\TCP MODBUS\SCPI	
Dimensions(W×H×D mm)	426×175×462	
Cutout dimensions	426(W)×175(H)	
Foot height	17.5mm	
Weight	Approximately 15kg	
Whole unit power consumption	30W	

Any changes to the above parameter specifications will not be notified separately.

[Conditions]

Temperature: 23±5℃, humidity: 30%-75%RH, input waveform: sine wave, common mode voltage: 0V, line filter: OFF, frequency filter: ON for frequencies below 440Hz, power factor λ: 1. peak factor: 3. After warming up. Under wiring conditions, after zero adjustment or range change.

In the measurement accuracy formula, f represents frequency in kHz.

When the data update rate is 50ms or 100ms, add 0.03% of the reading to all accuracies.

Due to the effect of temperature changes after zero adjustment or range change:

Add 0.02%/℃ to voltage DC accuracy and range, add 500μA/℃ to current DC accuracy, add 50μV/℃ to external sensor DC accuracy, and for power DC accuracy, add the product of the voltage and current effects.