

Multi-channel Power Analyzer AN87600(F)

- ★ Six-channel simultaneous power analysis
- ★ **Basic accuracy:** $\pm 0.1\%$
- ★ **Measurement bandwidth:** DC, 0.5Hz~100kHz
- ★ **Acquisition rate:** 200kSps
- ★ **Maximum voltage:** standard 1000V, optional 1500V
- ★ **Maximum current:** 50A/20A (standard)/10A/5A/2A/1A, support combination, optional sensor
- ★ **LCD display:** Full touch screen, custom display items, wave display
- ★ **Data storage:** Custom storage items, export in CSV format
- ★ **Perfect size:** Standard 3U height, suitable for integration



Man-machine Operation

- Standby power consumption and power analysis of single-phase/three-phase household appliances and commercial appliances
- PV inverter power, efficiency, harmonic analysis.
- Electric vehicles, charging pile electrical performance test.
- Power electronics, transformers, generator power/harmonic analysis.
- Inverter, inverter motor power/harmonic analysis.
- Switching power supply power/harmonic/inrush current analysis.
- Lighting/LED power analysis.

Features

- ★ **Multi-channel:** 1~6-channel synchronous measurement unit, flexibly configured as multi-channel single-phase, three-phase three \times 2, three-phase four \times 2, four-phase (DC + three-phase three) and other modes for measurement of various loads (air conditioners, inverters, frequency converters, motors);
- ★ **High precision:** High-speed FPGA+ARM processor dual-core processing, 16-bit high-speed high-precision AD converter, accuracy of 0.1%, up to 100ms display update cycle;

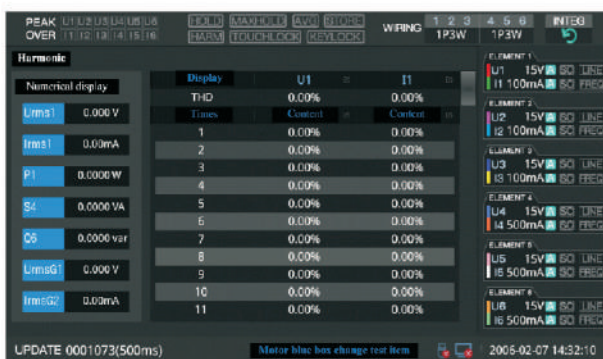
Channel configuration

The multi-channel power analyzer can support a variety of wiring methods, including 1P2W, 1P3W, 3P3W, 3V3A, 3P4W, etc.

Wiring	1 channel	2 channels	3 channels	4 channels	5 channels	6 channels
1P2W 1-phase 2-wire	1P2W	1P2W	1P2W	1P2W	1P2W	1P2W
1P3W 1-phase 3-wire		1P3W			1P3W	
3P3W 3-phase 3-wire		3P3W			3P3W	
3V3A 3-phase 3-wire		3V3A			3V3A	
3P4W 3-phase 4-phase		3P4W			3P4W	

- ★ **Wide power range:** 20A current measurement (optional 50A/10A/5A/2A/1A and other specifications, support combination) per channel, minimum power resolution of 0.1mW, meeting the measurement requirements of standby power consumption and rated power;
- ★ **Wide broadband:** AC/DC signal, power measurement bandwidth DC, 0.5~100kHz, suitable for various standard/non-standard sine wave load power measurement;
- ★ **Multi-channel harmonic analysis:** Simultaneous harmonic analysis for six-channel, up to 50th harmonic measurement, distortion analysis, visual display of harmonic component of each order and total components;
- ★ **Multi-channel frequency measurement:** Simultaneous frequency measurement for six channels;
- ★ **Line filtering:** 500Hz, 5.5kHz low-pass filter is used to measure the fundamental wave of PWM wave and filter out the high-frequency interference of switching power supply current;
- ★ **Sensor:** Ratio function, normal I-I, V-V voltage/current transformers; I-V current sensors with BNC interface, maximum input voltage of 10V, optional high current sensors;
- ★ **Efficiency calculation:** Measurement of input/output energy consumption of the equipment at the same time, and calculate its efficiency;
- ★ **Electric energy accumulation:** accumulate forward/reverse electric energy and comprehensive electric energy separately, and measure electric energy for sale and purchase;

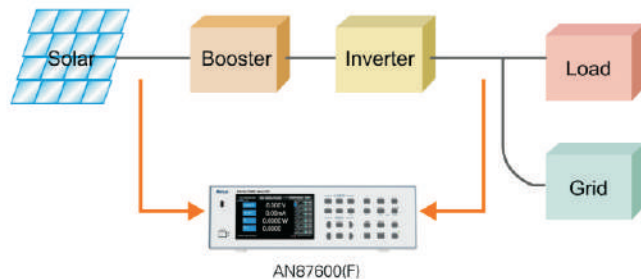
Applications



Touch screen setup experience display

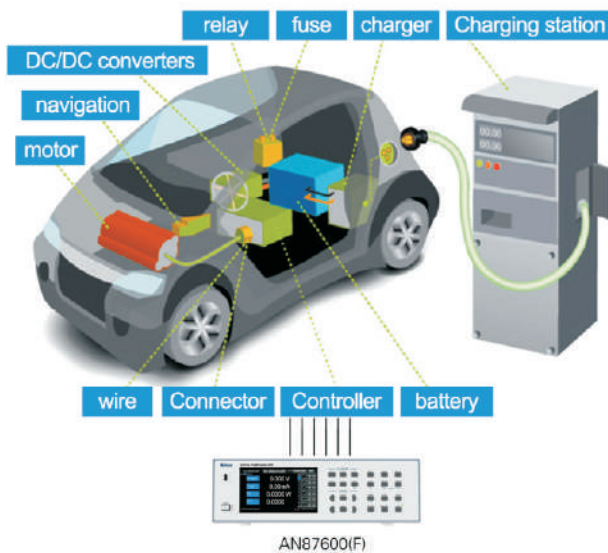
PV inverter power measurement

- Meet GB/T 37409-2019 Testing specifications for photovoltaic grid-connected inverter
- Voltage 0~1500V
- Current: 0~50A/current sensor.
- Simultaneous measurement of input/output (single-phase/three-phase) power and power factor
- Automatic efficiency calculation
- 50th harmonic and distortion analysis
- Two-way power measurement for buying and selling electricity



Electric vehicle electrical performance measurement

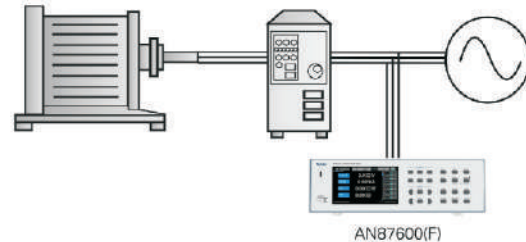
- Multi-channel to test multi parameters simultaneously: charging station performance, battery charge/discharge performance, power conversion performance, motor performance, etc.
- AC/DC, maximum current of 50A, extended to larger current sensors.
- High precision, basic accuracy of 0.1%, minimum power resolution of 0.1mW.
- Measure AC/DC signal instantaneous RMS, average, peak, electric energy and so on.



Inverter motor, frequency converter power measurement

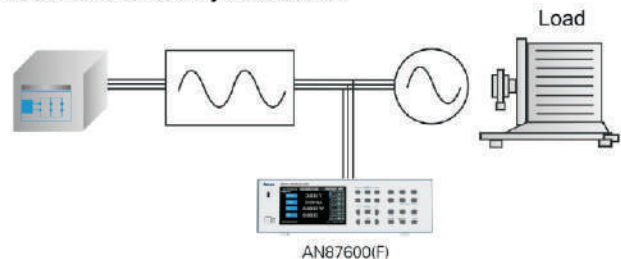
- Meet GB12668 standard.
- Power bandwidth DC, 0.5Hz~100kHz
- Current: 0~50A/current sensor.

- Simultaneously measure input and output power
- 50th harmonic and distortion analysis



Power supply, UPS power measurement

- Current: 0~1A/2A/5A/10A/20A/50A
- Power bandwidth DC, 0.5Hz~100kHz
- Simultaneous measuring input/output (single-phase, three-phase) power, monitoring battery charge/discharge.
- Automatic efficiency calculation.



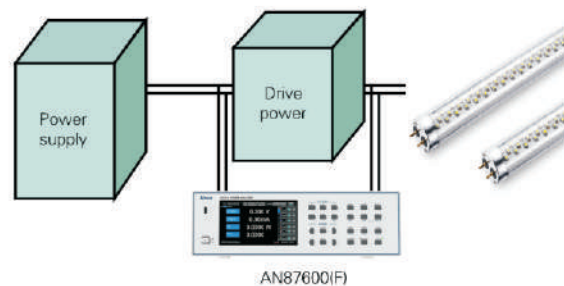
Home appliance performance evaluation, standby power consumption measurement.

- Meet IEC 62301-2011 standard.
- Current: 0~1A/2A/5A/10A/20A/50A, measurement of rated power and standby power
- Minimum power resolution: 0.1mW
- 50th harmonic and distortion analysis.



Lighting, LED power measurement

- Current: 0~1A/2A/5A/10A
- Minimum power resolution: 0.1mW
- Measurement of drive power input/output power, power factor, efficiency
- 50th harmonic and distortion analysis.



Specifications

Model	AN87600(F)-X	
Measurement channel-x	1~6	
Wiring	1P2W (1-phase 2-wire), 1P3W (1-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)	
Measurement parameters	Voltage U, current I, active power P, reactive power Q, apparent power S, power factor λ, voltage frequency fU, current frequency fI, phase angle Φ, efficiency η, total electrical energy Wh, forward electrical energy Wh+, reverse electric energy Wh-, current integral Ah, 50th harmonic analysis HDF, voltage/current distortion THD, peak voltage Vpk, peak current Ipk, voltage crest factor CfU, current crest factor CfI...	
Input impedance	Voltage: about 2MΩ, Direct current input: Approx. 2.5mΩ (50A specification) Current sensor input: Approx. 100kΩ	
AD acquisition rate	About 100kS/s	
Full scale crest factor	3 *See below for exceptions	
Rated voltage range (Direct input)	15/30/60/100/150/300/600/1000*[V] (optional 1500*[V]) * The crest factor of 1000V full scale is 1.5	
Rated current range (Direct input)	Size for 20A current: 100m/200m/500m/1/2/5/10/20[A] Optional: Size for 50A current: 500m/1/2/5/10/20/40/50*[A] * The crest factor of 50A full scale is 1.5 Size for 10A current: 50m/100m/200m/500m/1/2/5/10[A] Size for 5A current: 20m/50m/100m/200m/500m/1/2/5[A] Size for 2A current: 10m/20m/50m/100m/200m/500m/1/2[A] Size for 1A current: 5m/10m/20m/50m/100m/200m/500m/1[A]	
Rated current range (BNC Sensor)	50m/100m/200m/500m/1/2/5/10[V]	
Accuracy of voltage/current	(1%~110%)*x range * Accuracy of 1000V voltage, 20A current: (1%~100%) x scale	
Power factor Range	±(0.001 ~ 1.000)	
Voltage measurement accuracy	DC	±(0.1%×display+0.1%×range)
	0.5Hz≤f<45Hz	±(0.1%×display+0.2%×range)
	45Hz≤f≤66Hz	±(0.1%×display+0.05%×range)
	66Hz<f≤1kHz	±(0.1%×display+0.2%×range)
	1kHz<f≤10kHz	±{(0.1+0.05×(f-1))%×display+0.2%×range}
	10kHz<f≤100kHz	±{(0.5+0.04×(f-10))%×display+0.3%×range}
Current measurement accuracy	DC	±(0.1%×display+0.1%×range)
	0.5Hz≤f<45Hz	±(0.1%×display+0.2%×range)
	45Hz≤f≤66Hz	±(0.1%×display+0.1%×range)
	66Hz<f≤1kHz	±(0.1%×display+0.2%×range)
	1kHz<f≤10kHz	±{(0.1×f) %display+0.2%×range}
	10kHz<f≤100kHz	±{(1+0.08×(f-10))%×display+0.3%×range}
Power measurement accuracy	DC	±(0.1%×display+0.1%×range)
	0.5Hz≤f<45Hz	±(0.3%×display+0.2%×range)
	45Hz≤f≤66Hz	±(0.1%×display+0.1%×range)
	66Hz<f≤1kHz	±(0.2%×display+0.2%×range)
	1kHz<f≤10kHz	±{(0.2+0.1×(f-1)) %×display+0.2%×range}
	10kHz<f≤50kHz	±{(0.2+0.1×(f-1)) %×display+0.3%×range}
Active power Range	50kHz<f≤100kHz	±{(5.1+0.18×(f-50))%×display+0.3%×range}
	Size for 20A current: 2.2mW~4.4kW@220V, PF=0.01~1	
	Optional:	
	Size for 50A current: 11mW~11kW@220V, PF=0.01~1	
	Size for 10A current: 1.1mW~2.2kW@220V, PF=0.01~1	
	Size for 5A current: 0.4mW~1.1kW@220V, PF=0.01~1	
Active power resolution	Size for 2A current: 0.2mW~440W@220V, PF=0.01~1	
	Size for 1A current: 0.1mW~220W@220V, PF=0.01~1	
	0.1mW	
	Frequency range	
	DC, 0.5Hz ~ 100kHz	
	Frequency measurement accuracy	
Electric energy measurement range	±0.1%×display	
	Harmonic measurement	
	11Hz ~ 600Hz, 1 ~ 50th harmonic component, total distortion	
	Electric energy measurement range	
	0~999999MWh (Resolution: 1mWh/0.01mAh)	
	Electric energy measurement accuracy	
Expanded uncertainty	±(0.1%×display+0.1%×range)	
	Voltage, current, power, frequency, electric energy: ≤0.20%	
	Filter function	
	500Hz, 5.5kHz voltage line, current line and frequency filtering	
	Ratio	
	1 ~ 50000	
Data update cycle	100m / 250m / 500m / 5 [s]	
Control interface	Standard: RS-232, switching interface, network port; Optional: RS-485, GPIB	
Display	7" LCD touch screen	
Outline dimension	426 x 132.5 x 430.3 (W, front bezel) x (H, front bezel) (D, excluding posts), mm	
Size of the opening	422 x 128.5 (W, body) x (H, body), mm	
Foot height	17.5 mm	
Machine weight	Approx. 7.5 kg	