

PA3000

FOUR-CHANNEL, MULTI-PHASE AC/DC POWER ANALYZER



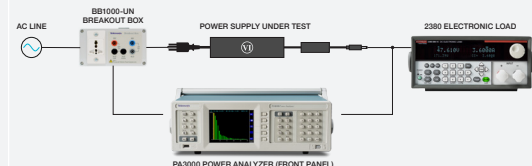
The Tektronix PA3000 is a one- to four-channel power analyzer that is optimized for testing today's single- and multi-phase, high efficiency power conversion products and designs. Use it to quickly visualize, analyze, and document power efficiency, energy consumption, and electrical performance to the latest regional and international standards.

APPLICATIONS

A UNIQUE COMBINATION OF FEATURES FOR A WIDE RANGE OF APPLICATIONS

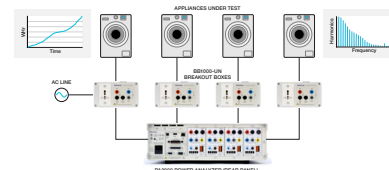
AC/DC Power Supplies and LED Drivers

- 0.04% basic accuracy for high efficiency testing
- Standby power testing as low as 10mW
- Full compliance IEC62301 ED testing
- Harmonic analysis up to 100th order
- Custom limits for pass/fail testing
- Peak detection for inrush current testing



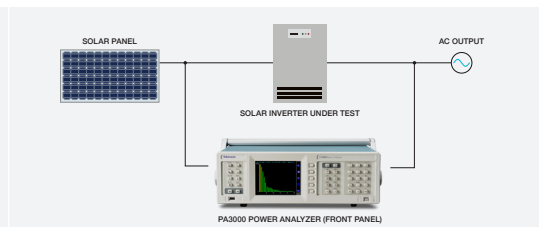
Appliances and Consumer Electronics

- Dedicated Integrator mode for energy consumption testing
- PWRVIEW software with custom logging features to conduct long term testing
- Dedicated standby power mode and 10mW standby power capability with IEC62301 test



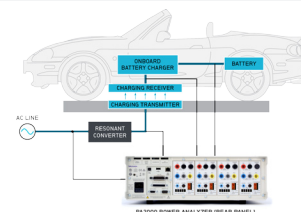
Solar Inverters and UPS Systems

- Four available channels for full system efficiency
- 90uA-30A current range with available high current transducers (CTs)
- Standard 15V supply for external CTs
- 100 harmonics for output voltage and power quality testing
- Standard wiring configurations for 1ph-2W, 1ph-3w, 3ph-3w, 3ph-3w (3v3A), 3ph-4w



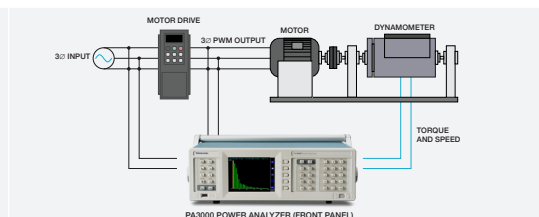
Wired and Wireless Automotive Battery Chargers

- Four available channels for full system efficiency
- 1 MHz bandwidth for harmonic analysis on transmitter-receiver high frequency power signals
- 90uA-30A current range with available high current transducers (CTs) for high current
- Standard 15V supply for external CTs



Three Phase Motor Drives

- Four channels for 3ph efficiency testing
- 3ph-3w config for 3ph input-output testing
- Dedicated PWM mode to decode fundamental carrier frequency from high frequency modulated voltage signal
- Torque and speed inputs for system efficiency testing



KEY SPECIFICATIONS

MEASUREMENT CHANNELS

Voltage connections (4 mm safety banana jack inputs)	Measurements to 600 V _{rms} , DC to 1 MHz, continuous Measurements to 2000 V _{pk} , maximum crest factor of 10
30 A current connection (4 mm safety banana jack inputs)	Measurements to 30 A _{rms} , DC to 1 MHz, continuous Measurements to 200 A _{pk} , maximum crest factor of 10 Measurements to 75 A _{rms} for 1 s non-repetitive
1 A current connection (4 mm safety banana jack inputs)	Measurements to 1 A _{rms} , DC to 1 MHz, continuous Measurements to 5 A _{pk} , maximum crest factor of 10 Measurements to 2 A _{rms} for 1 s non-repetitive
External current connection (2 mm safety banana jack inputs)	Measurements to 20 V _{pk} , DC to 1 MHz, continuous Measurements to 50 V _{pk} for 1 s
Analog card power supply outputs	±15 V supply ±15 V ±5%, 250 mA max (protected) per analog card output

Each measurement channel includes a set of 4 mm stackable banana safety test leads and 2 mm stackable banana safety test leads.

SUPPLEMENTAL CHARACTERISTICS

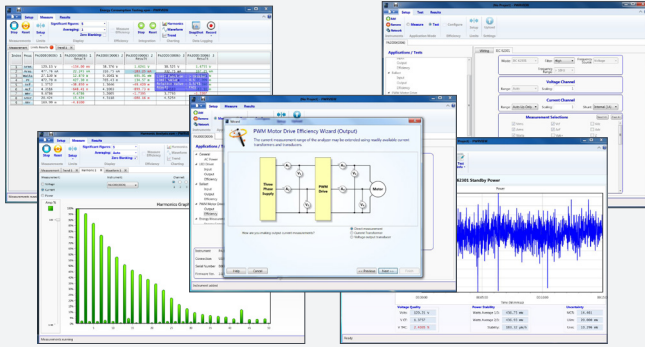
Hours accuracy	±0.0125%
Watts accuracy (45 Hz to 850 Hz)	±(V _{rms} ACC × A _{rms}) ±(A _{rms} ACC × V _{rms})
Watt hour accuracy	±(Wattacc + Houracc)
VA accuracy (45 Hz to 850 Hz)	±(V _{rms} ACC × A _{rms}) ±(A _{rms} ACC × V _{rms})
PF accuracy	Wacc / VA
Frequency accuracy	
0.1 Hz to 10 Hz	0.1% of reading
10 Hz to 1 MHz	0.5% of reading
Analog inputs	
Ranges	10 V _{ac} range: ±1 V to ±10 V V _{dc} range: ±0.1 V to ±1 V
Accuracy	±0.2% of reading ±0.2% of range ±0.005 V
Sample rate	1000 samples per second

CURRENT ACCURACY

Accuracy A_{rms}	(45 Hz to 850 Hz)
1 A shunt	±0.04% reading ±0.04% range
30 A shunt	±0.04% reading ±0.04% range
External shunt	±0.1% reading ±0.04% range
Accuracy A_{rms}, typical	(10 Hz to 45 Hz, 850 Hz to 1 MHz)
1 A shunt	±(0.05 + 2×10 ⁻⁵ × f%) reading ±0.05% range ±40 μA
30 A shunt	±(0.05 + 2×10 ⁻⁵ × f%) reading ±0.05% range ±4 mA
External shunt	±(0.1 + 2×10 ⁻⁵ × f%) reading ±0.05% range ±1.1 mV
Accuracy A_{dc}	
1 A shunt	±0.05% reading ±0.1% range ±100 μA
30 A shunt	±0.05% reading ±0.1% range ±10 mA
External A shunt	±0.1% reading ±0.1% range ±1.1 mV
Ranges	(peak)
1 A shunt	12.5 mA, 25 mA, 50 mA, 125 mA, 250 mA, 500 mA, 1.25 A, 2.5 A, 5 A
30 A shunt	500 mA, 1 A, 2 A, 5 A, 10 A, 20 A, 50 A, 100 A, 200 A
External A shunt	50 mV, 100 mV, 200 mV, 500 mV, 1 V, 2 V, 5 V, 10 V, 20 V

VOLTAGE ACCURACY

Accuracy V_{rms} (45 Hz to 850 Hz)	±0.04% reading ±0.04% range
Accuracy V_{rms} typical (10 Hz to 45 Hz, 850 Hz to 1 MHz)	±(0.05 + 1×10 ⁻⁵ × f%) reading ±0.05% range ±20 mV
Accuracy V_{dc}	±0.05% reading ±0.1% Range ±50 mV
Ranges (peak)	5 V, 10 V, 20 V, 50 V, 100 V, 200 V, 500 V, 1000 V, 2000 V



FREE PWRVIEW SOFTWARE -

The Complete Power Analysis Suite

- Remote operation of multiple PA3000 Power Analyzers for monitoring and analyzing data
- Compliance test IEC 62301, IEC 61000-3-2, MIL-STD-1399-Section 300B
- Default modes for Efficiency testing, Energy consumption, Standby power, PWM motor drive
- User-defined pass-fail limits
- Waveforms, Harmonics and Trend Charts
- Custom logging features
- Archive and export to .csv and .xls

ON-LINE DEMONSTRATION VIDEOS

VIDEO	DURATION
Power Supply Efficiency Testing	3:46
3-Phase Motor Drive Efficiency Testing	8:22
Standby Power Testing	4:31
Energy Consumption Testing	4:17
Inrush Current Testing	3:31

For more information, to get a demonstration or a price quote, please contact your account representative.