

Voltech PMiv Four-Channel Power Analyzer

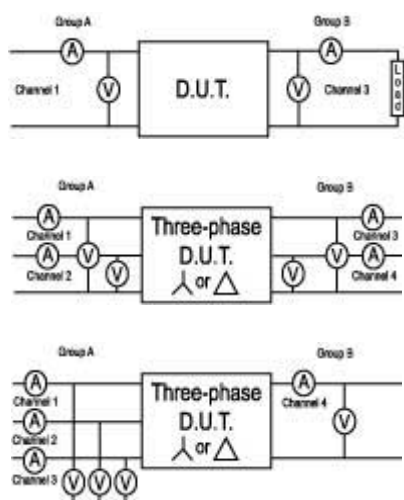
Precision power analysis from Voltech



Whether you are testing today's electrical and electronic products or designing products for tomorrow, the PMiv multi-phase power analyzer from Voltech Instruments provides all the power measurements you need.

The PMiv is a rugged, versatile digital power analyzer that offers tremendous price performance.

With its four independent, fully floating, isolated channels—each with a voltage and current input—the user can connect to virtually any single or multi-phase application. As an example, the following connections are possible:



Features

Basic Features

- | Basic measurements of volts, amps, watts, frequency, power factor, crest factor, form factor and impedance measurements
- | Pre-compliant harmonics analysis to IEC 61000-3-2
- | Energy consumption including W-hr, VA-hr, VAr-hr, and Amp-hr
- | Four 0-600 Vrms, 0-16 A independent, floating, isolated inputs
- | 0.1% basic accuracy for volts, 0.15% basic accuracy for amps, 0.2% basic accuracy for watts (at 1 Hz to 1 kHz)
- | DC to 20kHz bandwidth
- | 50kHz sampling on each channel
- | On-board memory to store settings and results

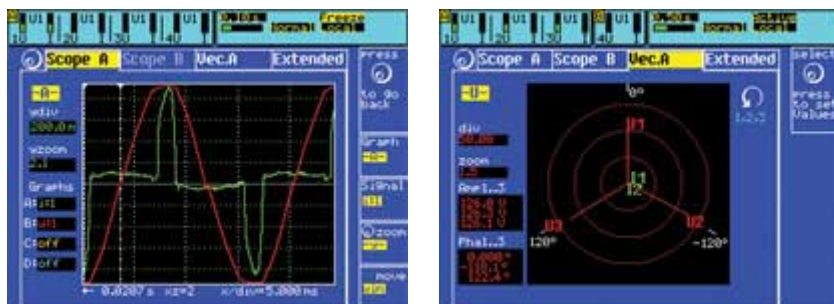
Graphics Display

The versatile 320 x 240 pixel color display can be quickly configured to show every aspect of power measurement from 6-digit numeric results to x-y diagrams or graphical bar charts for harmonics measurements.

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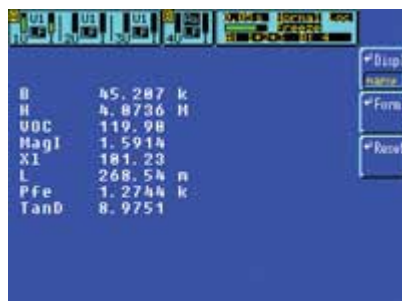
http://www.voltech.com/products/pwr_anl/pmiv/pmiv.htm

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Formula Editor

By performing logical and mathematical operations, the built-in formula editor can be used to derive the values of many other measurements. For example, properties of magnetic materials such as permeability, inductance and core loss can be calculated and displayed.



Harmonics and Flicker (Optional)

The PMiv can make pre-compliant harmonics and flicker measurements of current and voltage in accordance with IEC 61000-3-2/3 for CE marking. All necessary functions are built into the analyzer with on-board display of Class D determination, voltage and current harmonics, flicker and D parameters.

Inputs

The direct measurement inputs of the PMiv have a wide dynamic range, including eight voltage ranges (6, 12.5, 25, 60, 130, 250, 400 and 600V) and six current ranges (0.6, 1.2, 2.5, 5, 10 and 16A).

An additional voltage input with six ranges (0.12, 0.25, 0.5, 1, 2 and 4V) extends the measuring range of the PMiv almost indefinitely.

Interfaces

Standard interfaces:

- | RS232 interface
- | Parallel printer interface

Optional PMiv interfaces include:

- | IEEE488.2 interface
- | Digital and analog inputs and outputs
(4 digital inputs, 4 digital outputs, 4 analog inputs, 4 analog outputs)
- | Additional, second analog I/O interface
- | PCMCIA or floppy drive memory option

Flexible Measurement Set-up

Normally fully automatic, the PMiv also gives you complete control of all measurement settings. Using the on-screen schematic, cycle time, signal filters and trigger options can be chosen quickly and confidently.



Standard Model and Options

The standard PMiv model includes:

- | RS232 interface
- | RS232 cable
- | Parallel printer port

- | Tilt handle
- | Crocodile clips
- | Power lead set
- | User manual
- | Calibration certificate

Available PMiv options include:

- | Flicker analysis
- | Transient analysis with memory extension
- | Process signals interface
- | IEEE488.2 interface
- | PCMCIA card slot (requires IEEE488.2 interface)
- | 3.5" floppy drive
- | Memory expansion to 1.3MB per power channel
- | WYE-to-Delta conversion
- | Error-compensated current clamps
- | Rack mount kit
- | Spare user manual

Specifications

Accuracy (Specified as \pm (% of reading + % of measuring range) at 23°C after 1 hour warm-up)

Frequency (Hz)	Voltage Measurements	Current Measurements	Active Power Measurements
dc	0.2 + 0.2	0.4 + 0.4	0.5 + 0.5
1-1k	0.1 + 0.1	0.15 + 0.1	0.2 + 0.1
1k-5k	0.2 + 0.2	0.2 + 0.2	0.3 + 0.2
5k-20k	0.3 + 0.4	0.5 + 0.5	0.6 + 0.5

Other measurement accuracies are derived from their calculations. E.g., VA = V x A.
VA accuracy = \pm ((Amps reading x Volts error) + (Volts reading x Amps error))

Sampling rate: 50kHz on each channel

Temperature effect: 0.02% per °K

Voltage Input	
Ranges	6, 12.5, 25, 60, 130, 250, 400 and 600V
Overload Withstand	600V continuously, 1500V for 1s
Input Impedance	1M Ω , 10pF
Common Mode Rejection	>140dB @ 100V, 100kHz

Current Input	
Ranges	0.6, 1.2, 2.5, 5, 10, 16A
Overload Withstand	18A continuously, 50A for 1s, 150A for 20ms
Input Impedance	2m Ω
Common Mode Rejection	>150dB @ 100V, 100kHz
Isolation	All direct voltage and current inputs are isolated from each other and from earth; 600V max.

External Isolated Current Transducer Input	
Ranges	0.12, 0.25, 0.5, 1, 2, 4V
Overload Withstand	100V continuously, 250V for 1s
Input Impedance	100k Ω , 10pF
Common Mode Rejection	>134db @ 100V, 100kHz

Interfaces	
Data / Transfer Control	RS232 and IEEE488.2, using SCPI command set
Data Transfer Rate (max)	RS232: 115200 baud; IEEE488.2: 1Mbyte/sec.
Printer	Standard 25-pin, type D socket for parallel PC printer
PC memory card	Up to 64Mb

Auxiliary Inputs / Outputs	
Analog Inputs (4)	\pm 12V; accuracy: \pm (0.05% of measuring value + 0.05% of full scale); 16-bit resolution @ 1kHz; input resistance: 100k Ω
Analog Outputs (4)	\pm 11V; accuracy: \pm (0.05% of measuring value + 0.05% of full scale); 16-bit resolution; updated once per cycle; minimum load: 2k Ω

Digital Inputs (4)	Low: < 1V; high: > 4V; max. input: 60V @ 3mA
Digital Outputs (4)	Open collector; sink 100uA; max. input: 30V
Frequency Input (1)	Low: < 1V; high: > 4V; max. input: 10V
Power Supply	±5V @ 50mA

Environment	
Input Power	85-264V; 45-440Hz @ 45W
Operating Conditions	0-40°C; max. RH 85%, non-condensing
Safety	IEC 61010-1; CAT III; pollution degree 2; CE marked
Dimensions	12.6"(w) x 5.8"(h) x 12.1"(d); weight: 15lbs.

Accessories



- | [PS1000 switch for in-rush power switching](#)
- | [Ballast CT for electronic lighting ballast testing](#)
- | [CL100 clamp-on current transformer \(100:1\)](#)
- | [CL1000 clamp-on current transformer \(1000:1\)](#)
- | [CT1000 dual-ratio precision current transformer \(1000:1\)](#)

Further Information

For more information on the PMiv, including application notes and information on the structure of the product, visit our [download library](#).

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