4016

AC / DC Digital Power Analyzer（800Vp,20Arms/200Ap）

AC / DC DIGITAL POWER ANALYZER

PRODIGIT
INSTRUMENT PROFESSIONAL

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4016 AC/DC Digital Power Analyzer (800Vp, 20Arms/200Ap)

Features

- 6 Selectable Voltage Ranges：
  20Vpeak/0.001V，40Vpeak/0.001V，80Vpeak/0.01V
  200Vpeak/0.01V，400Vpeak/0.01V，800Vpeak/0.1V
- 18 Selectable Current Ranges：

0.002Apeak / 0.1uA	2Apeak / 0.1mA
0.004Apeak / 0.1uA	4Apeak / 0.1mA
0.008Apeak / 0.001mA	8Apeak / 0.001A
0.02Apeak / 0.001mA	10Apeak / 0.001A
0.04Apeak / 0.001mA	20Apeak / 0.001A
0.08Apeak / 0.01mA	40Apeak / 0.001A
0.2Apeak / 0.01mA	50Apeak / 0.001A
0.4Apeak / 0.01mA	100Apeak / 0.01A
0.8Apeak / 0.1mA	200Apeak / 0.01A

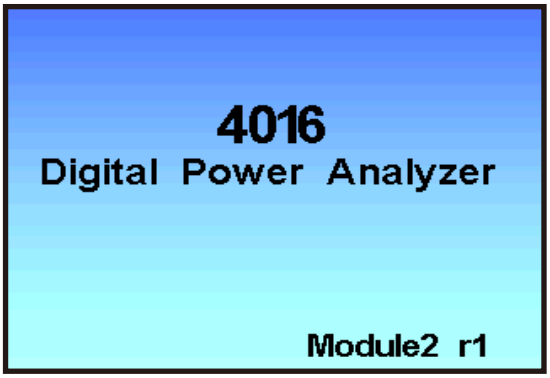
- Voltage/Current Frequency Range: DC, 20~1000Hz
- Embedded high-speed DSP, and V/A 16 bits Analog/Digital converters to provide continuous gapless measurement with max sampling rate up to 409.6kHz
- Input Range up to 800Vpeak / 200Apeak
- Corrent can be increased to 30Arms（option）
- 2mA minimum current range & 0.1uA Current resolution
- 0.0001uW minimum power resolution and 0.03W standby power integration mode are meet ENERGY STAR / IEC62301 requirement
- Color TFT LCD digital numeral and graphic display
- Display voltage, current by digital and graphics
- Capable of meeting the IEC 61000-3-2 harmonics measurement requirements and up to 50th Harmonics resolution.
- Data Logger mode：
  - Up to 256 records for Vrms / Arms / Watt / PF / VTHD measurements
  - External PC for no-limit records q'ty for long-term quality monitoring
- Built-in power switch to control
  - The input signal ON / OFF angle (0~359) / 1°
  - Test period and repetition times up to 9999 times
  - Repeat test period can up to more than 138days
- Inrush Current and Voltage measurement
- Support external CT and PT measurement functions to expand the measurement range of current and voltage
- Support external shunt measurement function: Can be used with Prodigit 7550A and 1000A to expand the higher measurement current and power integration Whr, Ahr measurement function demand
- Optional Interface ：GPIB、RS232、USB、LAN
- Optional ：9942 Measuring Fixture BOX

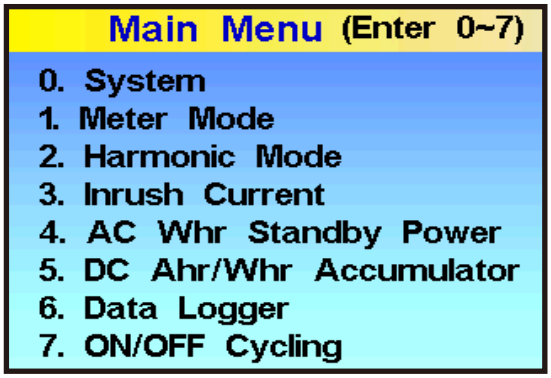
Description

- The 4016 is a new generation digital power analyzer designed specifically for single channel AC/DC power measurement. The 3.5” TFT LCD display screen provides graphics display and digital display, capable of meeting the IEC 61000-3-2 harmonics measurement requirements. Oscilloscope function of 4016 digital power analyzer for using many kinds of measurements such as harmonic distortion, It can directly capture the waveforms, values and can provide the harmonic values, the graphics amplitude of each harmonic, providing highly accurate and convenient power measurement.
- The Energy Star's standby power measurement has to meet IEC62301 equipment requirements. The 4016 digital power analyzer is designed to comply with IEC62301. It offers complete measurement requirements, including Power Integration minimum current range to 2mA (resolution 0.1uA) and the minimum measurement power of 0.0001uW, meet the specification requirements of 0.03W standby power measurement.
- The 4016 digital power analyzer current measurement range is rich wide. It can provide 18 selectable current ranges from 2mA to 200Apek and provide 6 selectable voltage ranges up to 800Vpeak. For the larger range of current and voltage measurement, it can also be combined with external CT (Current Transformer) or shunt, such as Prodigit 7550A,1000A and use with the PT(Potential Transformer) together to meet the measurement requirements.
- In order to understand the stability of the UUT(unit under test), the 4016 provides the Data Logger function, which is 256 states store for Vrms, Arms, Watt, PF, VTHD, and ITHD. If PC is available, there will be no limit states stores quantity. It provides a convenient and accurate power measurement of UUT stability.
- In addition, to understand the effect of the UUT (unit under test) on long-term repeated ON/OFF. The 4016 built-in a power switch can control the ON/OFF angle of the input signal, test period and repetition times to 9999 times, such as turn ON and turn OFF every 10 minutes continuously, the longest repeat test period can be longer than 138 days.
- 9942 measuring fixture box is an optional accessory to adapted plug/socket of UUT that easily connect 9942 with 4016 digital power analyzer to test many different kinds of plug/socket UUT.
- For remote operation, the 4016 digital power analyzer provides 4 optional interfaces GPIB / RS232 / USB / LAN data capture and storage.

Key Functions

- Power ON display and Main Menu

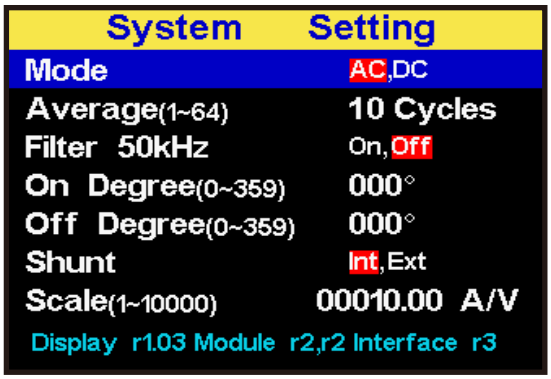




System

- Mode : AC/DC
- Average : 1~64

Default is 10 time/Average for measurement cycles. It is recommended that when the power source provides stable power, setting for 10 times/average cycles (50 Hz is 200ms, 166.67ms is for 60Hz. The easurement cycle time varies according to input voltage frequency. Please, refer to the parameter measurement method description) When the power supply is unstable, such as AC line, the average is set to 16 measurement cycles or more.



Specifications

MODEL			4016		
ACV & DCV Vrms, Vpk+/Vpk-, Vmax/Vmin, V Harmonic	Input Resistance ≧100KΩ	Range	20 Vpeak / 0.001V	40 Vpeak / 0.001V	80 Vpeak / 0.01V
		Max. Input	**80 Vpeak / 50 Vrms**		
	Input Resistance ≧1MΩ	Range	200 Vpeak / 0.01V	400 Vpeak / 0.01V	800 Vpeak / 0.1V
		Max. Input	**800 Vpeak / 500 Vrms**		
	Accuracy		±0.1% of (Reading + Range)		
			±0.5% of (Reading + Range, For Peak)		
ACA & DCA Arms, Apk+/Apk-, Amax/Amin, A Harmonic	Shunt 0.05A (10Ω)	Range	0.002 Apeak / 0.1uA 0.004 Apeak / 0.1uA	0.008 Apeak / 0.001mA 0.02 Apeak / 0.001mA	0.04 Apeak / 0.001mA 0.08 Apeak / 0.01mA
		Max. Input	**0.08 Apeak per 25ms / 0.05 Arms continuous**		
	Shunt 0.5A (1Ω)	Range	0.2 Apeak / 0.01mA	0.4 Apeak / 0.01mA	0.8 Apeak / 0.1mA
		Max. Input	**0.8 Apeak per 25ms / 0.5Arms continuous**		
	Shunt 5A (0.04Ω)	Range	2 Apeak / 0.1mA	4 Apeak / 0.1mA	8 Apeak / 0.001A
		Max. Input	**8 Apeak per 25ms / 5 Arms continuous**		
	Shunt 20A (0.005Ω) Standard Shunt 30A (0.00275Ω) Option	Range	10Apeak / 0.001A 20Apeak / 0.001A	40Apeak / 0.001A 50Apeak / 0.001A	100Apeak / 0.01A 200Apeak / 0.01A
		Max. Input	**200 Apeak per 25ms / 20Arms (30Arms Option) continuous**		
	Ext. Input	Input impedance	10 KΩ		
		Input Range	0~+/-2.5 Vpeak		
		Scaling	1.00~10000.00		
	Accuracy		±0.1% of (Reading + Range)		
			±0.5% of (Reading + Range,For Peak)		
VCF & ICF		Range	0.0000~9.9999		
		Accuracy	±0.5% of (Reading + Range)		
AC Power & DC Power Watt, VA, VAR		Range	Vrange*Arange		
		Accuracy	±0.2% of (Reading + Range)		
PF		Range	±0.001~1.000 / 0.001		
		Accuracy	1% of (Reading + Range, Corresponds to V and A)		
Voltage& Current Frequency Bandwith			dc~409.6KHz		
Voltage fundamental frequency		Range	dc, 20~1000 / 0.1Hz		
		Accuracy	± 0.1 Hz		
V/A Harmonic		Number	1~50 th / Same as ACV, ACA meter		
		Accuracy	±0.5% of (Reading + Range)		
V/A THD		Range	0%~255% / 0.001%		
		Accuracy	±0.5% of (Reading + Range)		
Inrush V/A	Voltage	Range	Same as ACV & DCV		
		Max. Input			
		Accuracy	±2% of (Reading + Range)		
	Current Shunt 20A (0.005 Ω)	Range	Same as ACA & DCA		
		Max. Input			
	Accuracy		±2% of (Reading + Range)		
	Measurement Wide		100mS		
AC ON / OFF Programmable output switch	ON		0 ~ 359°/1°		
	OFF		0 ~ 359°/1°		
	Accuracy		Max. +/- 1° @50/60Hz		
AC Whr Standby Power	Accumulated Time		$0_D\,0_H\,0_M\,0_S$ ~ $9999_D\,23_H\,59_M\,59_S$		
	WHr		0.000000 nWHr~999.999999 WHr / 1.000~9999.999 KWHr		
	Counter		$0_H\,0_M\,0_S$ ~ $99_H\,59_M\,59_S$		
	Accuracy		±0.2% of (Reading + Range)		
DC Ahr / Whr Calculator	Accumulated Time		$0_D\,0_H\,0_M\,0_S$ ~ $9999_D\,23_H\,59_M\,59_S$		
	WHr		0.000000 nWHr~999.999999 WHr / 1.000~9999.999 KWHr		
	AHr		0.000000 uAhr~999.999999 AHr / 1.000~9999.999 KAHr		
	Counter		$0_H\,0_M\,0_S$~$99_H\,59_M\,59_S$		
	Accuracy		±0.2% of (Reading + Range)		
Data Logger	Item		Vrms、Arms、Watt、PF、VTHD、ITHD		
	Updata Rate		0.2、0.5、1、2、5、10 Second		
	Image Time Wide		Updata Rate*256 second		
ON / OFF Cycling	ON time		$0_M\,0.200_S$ ~ $10_M\,0_S$		
	OFF Time		$0_M\,0.200_S$ ~ $10_M\,0_S$		
	Cycling times		0~9999		
	Image Time Wide		(ON Time + OFF Time)*256		
Low Pass Filter(V & A)			50KHz		
Interface(Option)			RS-232, GPIB, USB, Ethernet		

Specifications

MODEL		4016
Operating Theory	Rms Voltage (Vrms)	$\sqrt{\frac{1}{T}\int_0^T V_i^2 dt}$
	Rms Current (Arms)	$\sqrt{\frac{1}{T}\int_0^T A_i^2 dt}$
	'+ or - Peak Value (+/-Vpk, +/-Apk)	Max [Value$_{(t)}$] or Min [Value$_{(t)}$]
	Max.or Min Value (Vmax/Vmin, Amax/Amin, Wmax/Wmin)	Max [Value] or Min [Value]
	Crest Pactor (VCF, ICF)	Peak Value / Rms Value
	Active Power (Watt)	$\frac{1}{T}\int_0^T V_i \times A_i dt$
	Apparent Power (VA)	$Vrms \times Arms$
	Reactive Power (VAR)	$\sqrt{VA^2 - W^2}$
	Power Factor (P.F.)	$\frac{Watt}{Vrms \times Arms}$
	Harmonic	$\sqrt{Hr^2 + Hq^2}$
	Tatal Harmonic Distortion (%)	$\sqrt{H_2^2 + H_3^2 + \ldots H_{50}^2} \div H_1$
Rms Sampling Rate		4096 sample / Cycle @ 50/60 Hz
Inrush Sampling		<2.5us
V/A ADC		Dual 16-Bit, 500KSPS ADC with DSP
Power Input		110/220V 50/60Hz
Consumption		38VA
Protection (fuse)	Shunt 0.05A (10Ω)	3.6x11mm 250Vac 0.2A Fast
	Shunt 0.5A (1Ω)	3.6x11mm 250Vac 1A Lag
	Switch	6*30mm 250V/25A
Display		3.5" TFT LCD, 320 x RGB x 240
Dimensions	Height	99.4 mm with feet
	Width	213 mm
	Depth	304 mm
Weight		3.5 Kg
Storage temperature		-20 ºC to +60 ºC (-4 °F to 140 °F)
Operating temperature		0 ºC to 40 ºC (32 °F to 104 °F)
Maximum operating altitude		2000 M (6562 ft)
Maximum relative humidity		80% for temperatures up to 31 °C (88 °F) decreasing linearly to 50 % relative humidity at 40 °C (104 °F)

Order Information

▶ **4016** AC / DC Digital Power Analyzer
(800Vp, 20Arms / 200Ap)

Optional current : 30Arms

Optional interface :

1. GPIB Card
2. RS232 Card
3. USB Card
4. LAN Card

Option : 9942 AC Test Fixture

Option : 9943 DC Test Fixture

Option : 4016 rack (19") accessories