

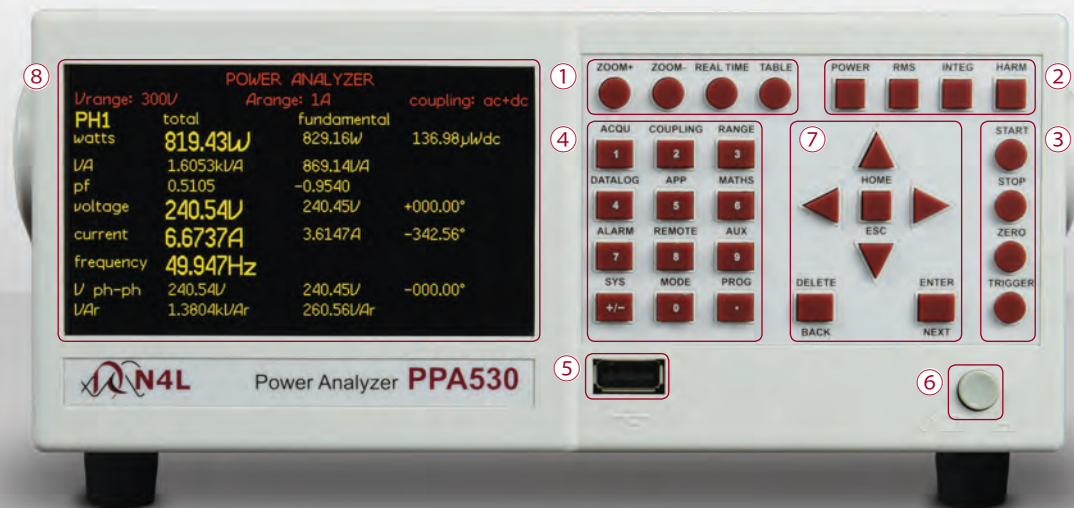
## PPA500 Series



## High Accuracy - Low Cost

Leading wideband accuracy	Basic 0.05% with class leading high frequency performance
Wide frequency range	DC, 10mHz to 500kHz
Fast sample rate and No-Gap	1M samples/s - High accuracy in noisy applications
Leading phase accuracy	0.005 degrees plus 0.01 degrees per kHz
Built in high precision current shunt	20Arms 300Apk or 30Arms 1000Apk direct plus a wide range of external sensors
Versatile interfaces	RS232, USB and optional LAN
Range of PC software options	Remote control, monitoring and recording of real time data, tables and graphs

# PPA5xx Precision Power Analyzer



FRONT VIEW

## ① SCREEN DISPLAY OPTIONS

Zoom, Real time and Table

## ② MEASUREMENT FUNCTION SELECTION BUTTONS

• POWER ANALYZER • TRUE RMS VOLTMETER and AMMETER • POWER INTEGRATOR • HARMONIC ANALYZER

## ③ START, STOP, ZERO AND TRIGGER

Trigger button refreshes measurement, Zero resets datalog or allows an offset trim  
Start and Stop buttons provide manual control of a measurement period

## ④ MEASUREMENT SETTINGS BUTTONS

Acquisition settings - Sets wiring configuration, Smoothing and data logging, Set coupling to AC, DC or AC+DC, Range - Internal or external attenuator, autoranging settings, scale factors, Application mode - Ballast, inrush current and standby power

## ⑤ FRONT USB PORT

USB memory port allows data and colour screen prints to be saved directly to a USB pen drive

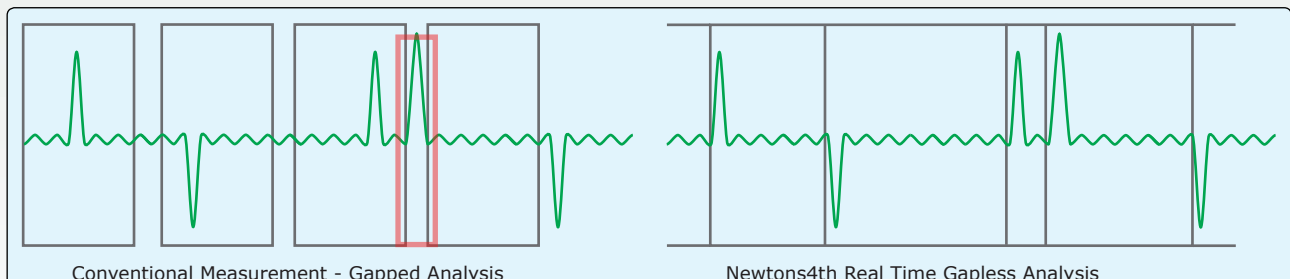
## ⑥ POWER BUTTON ⑦ MENU SELECTION AND CURSOR CONTROL

## ⑧ DISPLAY SCREEN

White LED backlight colour TFT display with high contrast and wide viewing angle

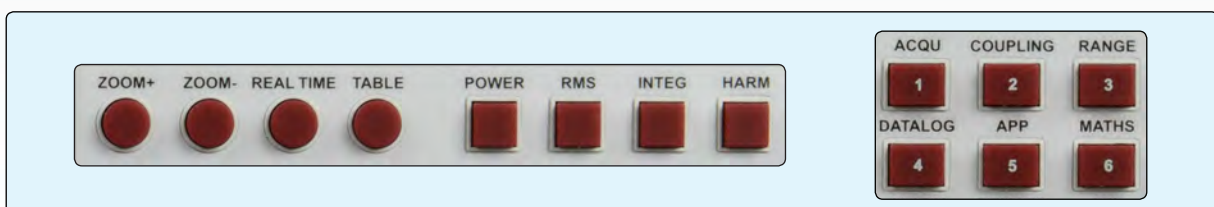
## Real Time No Gap Analysis

The PPA5xx series Power Analyzers use a real time no gap analysis technique unique to Newtons4th that enables real time measurements to be taken with no gap in incoming data from the ADC. This ensures that no events are missed, which is particularly important for the correct measurement of asynchronous waveforms.



## Intuitive User Interface Simplifies Setup

The PPA5xx user interface has been developed with ease of use in mind. A simple button layout simplifies setup of the instrument allowing the engineer to commence measurements quickly with no fuss.

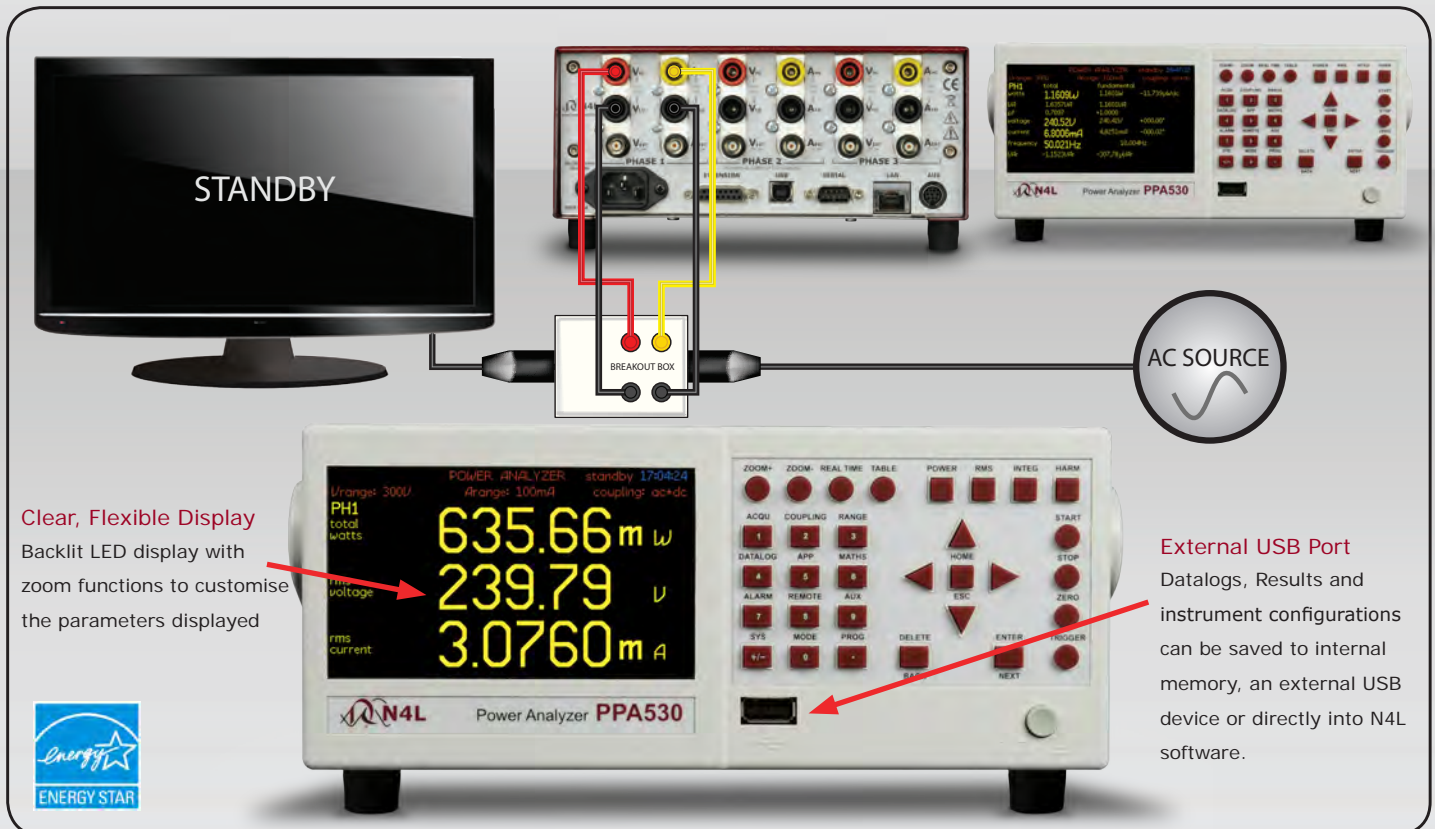




# Example Applications

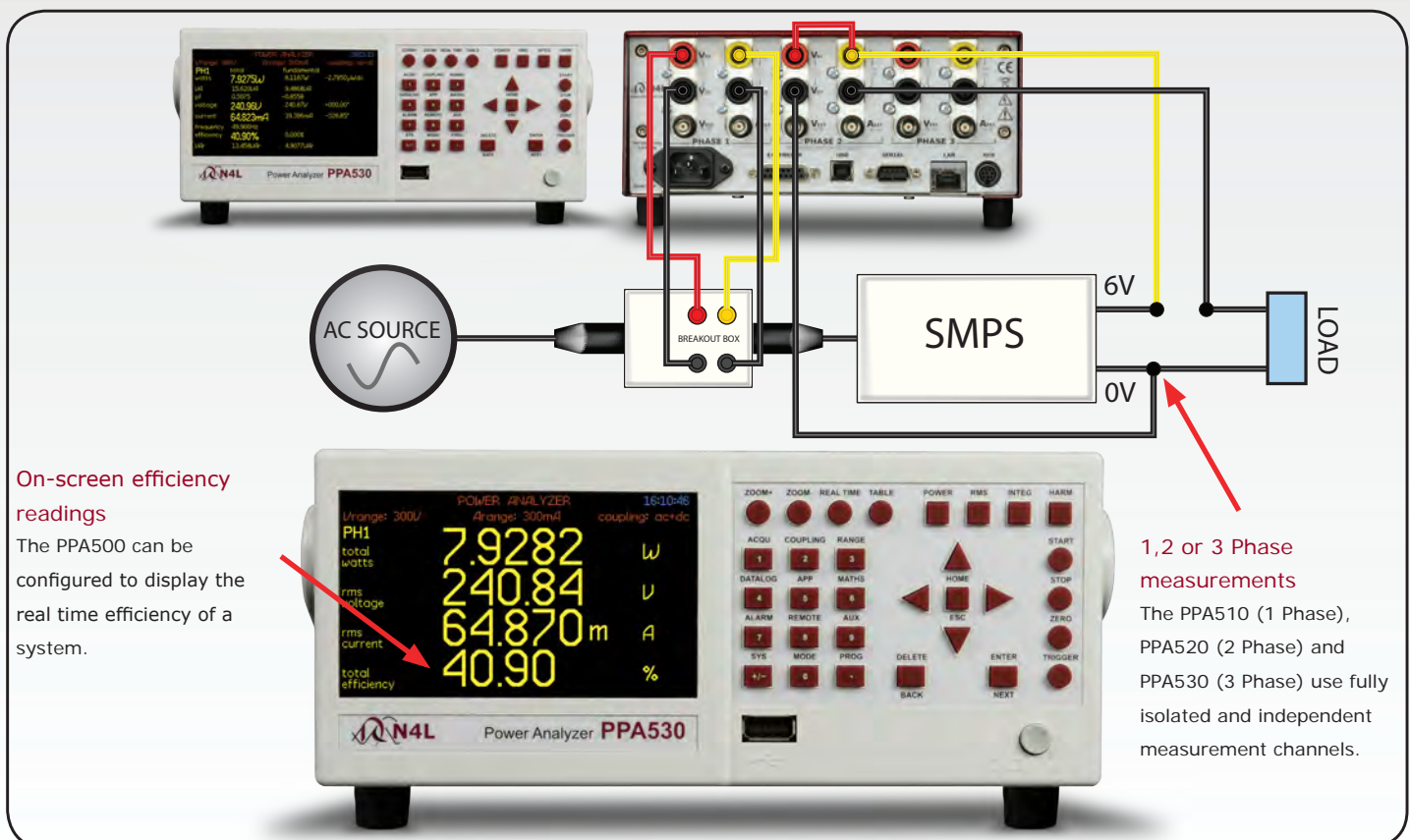
## Example Application : Standby Power Measurement IEC62301

The PPA5xx is the perfect instrument for tests such as IEC62301 Standby Power Testing. PC software that provides simple testing and reporting for IEC62301 is available from the N4L website.



## Example Application : AC-DC Power Supply Efficiency Testing using a PPA520/PPA530

The PPA520 or PPA530 can be used in 2 Phase 2 Wattmeter configuration for efficiency testing of power supplies, ballasts and many other devices.



# SPECIFICATION

Frequency Range				
		Normal	DC, 10mHz ~ 500kHz	
		x10	DC, 10mHz ~ 100kHz	
Voltage Input				
Internal	Range	Normal	1Vpk ~ 2500Vpk(1000Vrms) in 8 ranges	
		x10	100mVpk ~ 300Vpk in 8 ranges	
	Accuracy	Normal	0.05% Rdg+0.1% Rng+(0.005%×kHz)+5mV	
		x10	0.05% Rdg+0.1% Rng+(0.01%×kHz)+1mV	
External	Range	1mVpk ~ 3Vpk in 8 ranges [BNC connector 3Vpk max input]		
	Accuracy	0.05%Rdg+0.1%Rng+(0.005%×kHz)+5μV		
Current Input				
Internal	PPA500 20Arms Shunt 4mm Safety Connectors	Ranges	Normal	100mApk ~ 300Apk(20Arms) in 8 ranges
			x10	10mApk ~ 30Apk in 8 ranges
		Accuracy	Normal	0.05% Rdg+0.1% Rng+ (0.005%×kHz)+500μA
			x10	0.05% Rdg+0.1% Rng+ (0.01%×kHz)+100μA
	PPA500-HC 30Arms Shunt 4mm Safety Connectors	Ranges	Normal	300mApk ~ 1000Apk(30Arms) in 8 ranges
			x10	30mApk ~ 100Apk in 8 ranges
		Accuracy	Normal	0.05% Rdg+0.1% Rng+ (0.005%×kHz)+1mA
			x10	0.05% Rdg+0.1% Rng+ (0.01%×kHz)+300μA
External input (External shunt Current sensor)		Ranges	1mVpk ~ 3Vpk in 8 ranges	
		Accuracy	0.05% Rdg+0.1% Rng+(0.005%×kHz)+5μV	
Phase Accuracy				
		Normal	0.01deg+(0.01deg×kHz)	
		x10	0.01deg+(0.02deg×kHz)	
General				
Crest Factor		20 (Voltage and Current)		
Sample Rate		1Ms/s on all channels, No-Gap		
Standby Power		IEC62301 Compliance		
Application Modes		Ballast, Inrush, Standby Power		

Power Accuracy		
	Normal	$[0.1\%+0.1\%/pf+(0.01\%\times kHz)/pf]$ R <sub>dg</sub> +0.1%VA R <sub>ng</sub>
	x10	$[0.1\%+0.1\%/pf+(0.02\%\times kHz)/pf]$ R <sub>dg</sub> +0.1%VA R <sub>ng</sub>
40-400Hz	40-400Hz	As standard spec with range error reduced from +0.1%V,A,VA R <sub>dg</sub> to +0.05%V,A,VA R <sub>ng</sub>
CMRR - Common Mode Rejection Ratio		
	250V @ 50Hz - Typical 1mA (150dB)	
	100V @ 100kHz - Typical 3mA (130dB)	
Measurement Parameters		
	W ,VA ,Var ,pf ,V & A - rms ,rectified mean ,AC ,DC ,Peak ,Surge, Crest Factor ,Form Factor ,Star to Delta Voltage	
	Frequency (Hz), Phase (deg), Fundamentals, Impedance	
	Harmonics, THD, TIF, THF, TRD, TDD	
	Integrated Values, Datalog, Sum and Neutral values	
Datalog - Up to 4 user selectable measurement functions (60 with PC software)		
Datalog Window	No-Gap analysis, Minimum window 10ms	
Memory	RAM up to 16,000 records	
Communication Ports		
	RS232, LAN (Option L), USB, Extension (Aux)	
Standard Accessories		
Leads	Power, RS232, USB	
Connection Cables	20A (Std version) or 30A (HC version) 1.5m long 4mm stackable terminals. 1x red, 1x yellow and 2x black per phase	
Connection Clips	4mm terminated alligator clips - 1x red, 1x yellow and 2x black per phase	
Instruction Manual	User manual, Communications manual	
Other Documents	Calibration certificate, Quick start guide	
Mechanical and Environmental		
Display	480×272 dot full colour TFT, White LED Backlit	
Dimensions	92H×215W×312D mm excluding feet	
Weight	3.3kg(1 Phase), 4kg(3 Phase)	
Safety Isolation	1000Vrms or DC(CATII), 600Vrms or DC(CATIII)	
Power supply	90 ~ 265Vrms, 50 ~ 60Hz, 40VAm <sub>ax</sub>	
Operating Conditions	5°C to 40°C Ambient Temperature (or air intake temperature when rack mounted), 20-90% Non-Condensing Relative Humidity	

All specifications at 23°C ± 5°C . These specifications are quoted in good faith but Newtons4th Ltd reserves the right to amend any specification at any time without notice

The N4L product range includes Frequency Response and Impedance Analyzers, Selective Level Meters and Laboratory Power Amplifiers  
High Performance Power Analyzers Voltage Probes, Current Shunts, Clamps and Rogowski Coils



Contact your local N4L Distributor for further details

## Newtons4th

Newtons4th Ltd (abbreviated to N4L) was established in 1997 to design, manufacture and support innovative electronic equipment to a world-wide market, specialising in sophisticated test equipment particularly related to phase measurement. The company was founded on the principle of using the latest technology and sophisticated analysis techniques in order to provide our customers with accurate, easy to use instruments at a lower price than has been traditionally associated with these types of measurements



Flexibility in our products and an attitude to providing the solutions that our customers really want has allowed us to develop many innovative functions in our ever increasing product range



Newtons4th Ltd are ISO9001 registered, the internationally recognised standard for the quality management of businesses



In recognition of the technical innovation and commercial success of the PPA series, N4L received the "Innovation 2010" Queen's award for enterprise

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