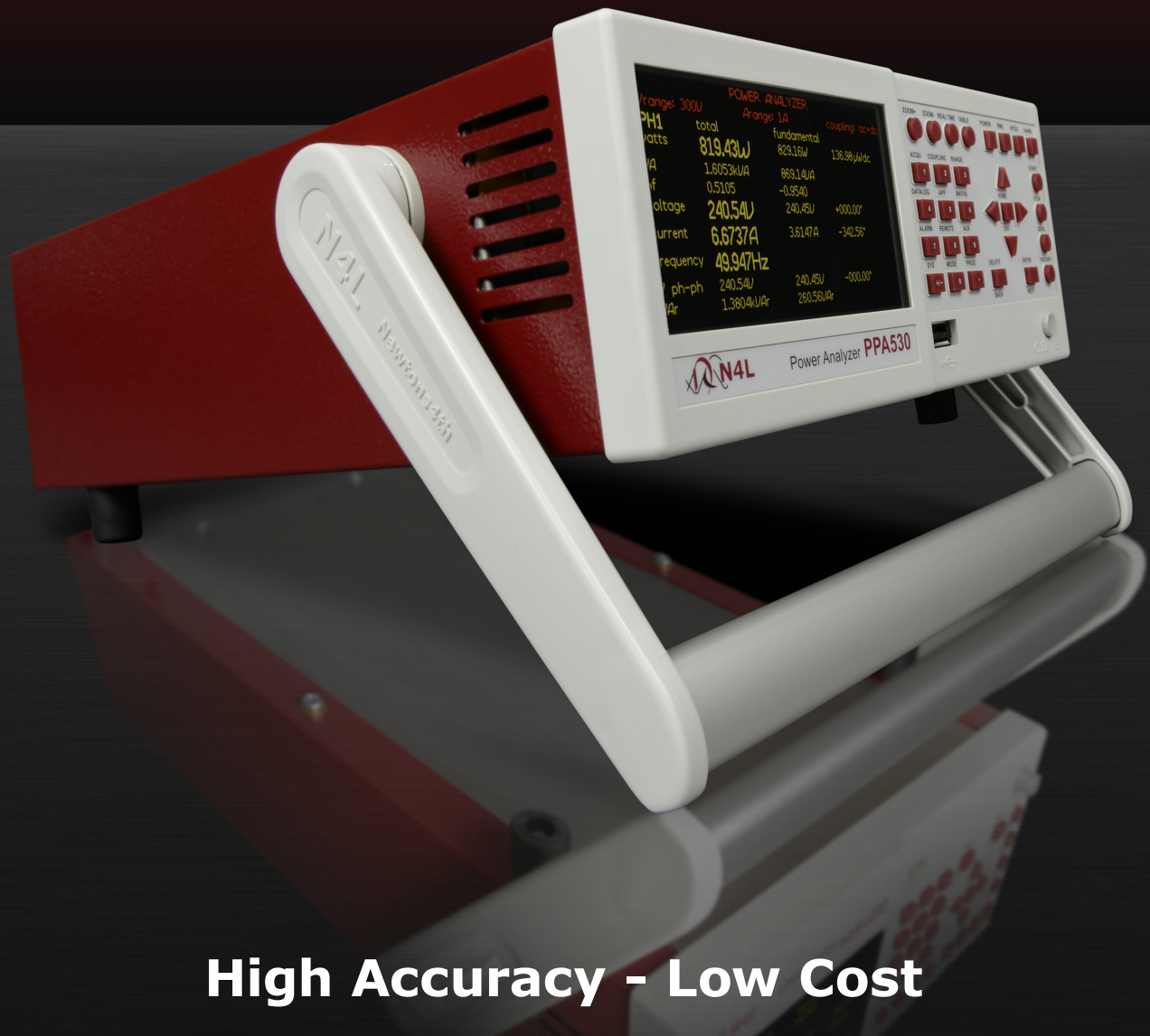


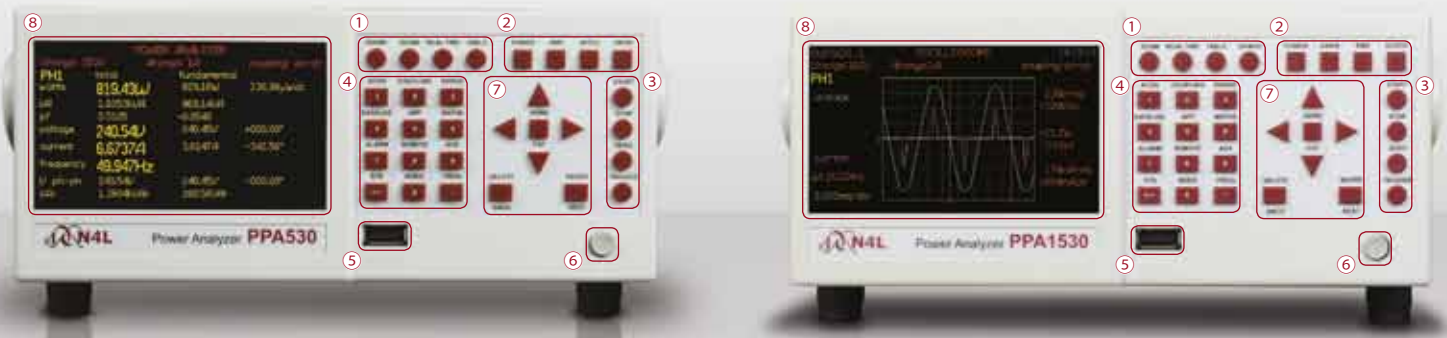
PPA500 Series
PPA1500 Series



High Accuracy - Low Cost

Leading wideband accuracy	Basic 0.05% with class leading high frequency performance
Oscilloscope/Graphical Display	PPA1500 features Oscilloscope and graphical datalog display
Wide frequency range	DC, 10mHz to 1MHz (DC, 10mHz to 500kHz PPA500)
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(Standard on PPA1500), GPIB
Range of PC software options	Remote control, monitoring and recording of real time data, tables and graphs

PPA5/15xx Precision Power Analyzer



FRONT VIEW

① SCREEN DISPLAY OPTIONS

PPA5xx: Zoom, Real time and Table

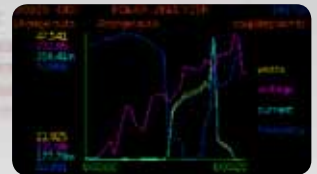
PPA15xx: Zoom, Real Time, Table, Graph

② MEASUREMENT FUNCTION SELECTION BUTTONS

PPA5xx: POWER ANALYZER, TRUE RMS VOLTMETER, POWER INTEGRATOR, HARMONIC ANALYZER

PPA15xx: POWER ANALYZER, HARMONIC ANALYZER, TRUE RMS VOLTMETER, OSCILLOSCOPE

Note: The PPA15xx includes the following modes via sub menu: POWER INTEGRATOR, PHASE METER, IMPEDANCE METER



PPA1500 Graphical Datalog View

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

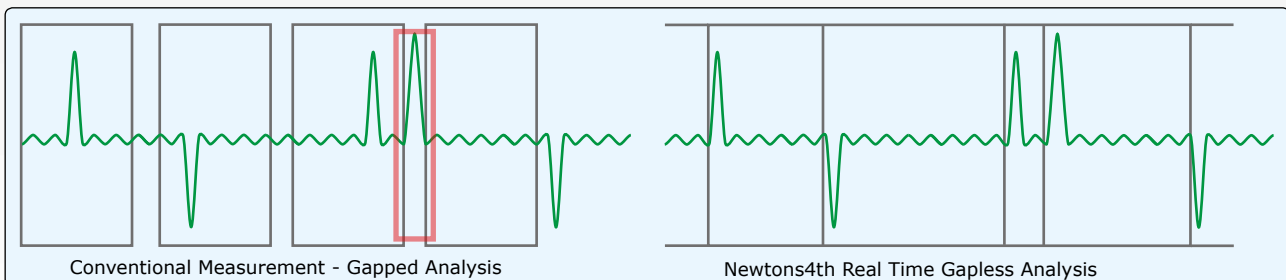
⑥ POWER BUTTON ⑦ MENU SELECTION AND CURSOR CONTROL

⑧ DISPLAY SCREEN

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

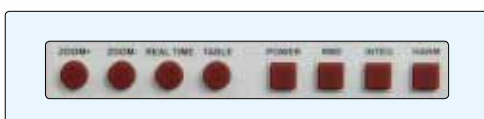
Real Time No Gap Analysis

The PPA5xx/PPA15xx 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/PPA15xx user interface has been developed with ease of use in mind. A simple button layout eases setup of the instrument allowing the engineer to commence measurements quickly with no fuss.



PPA5xx

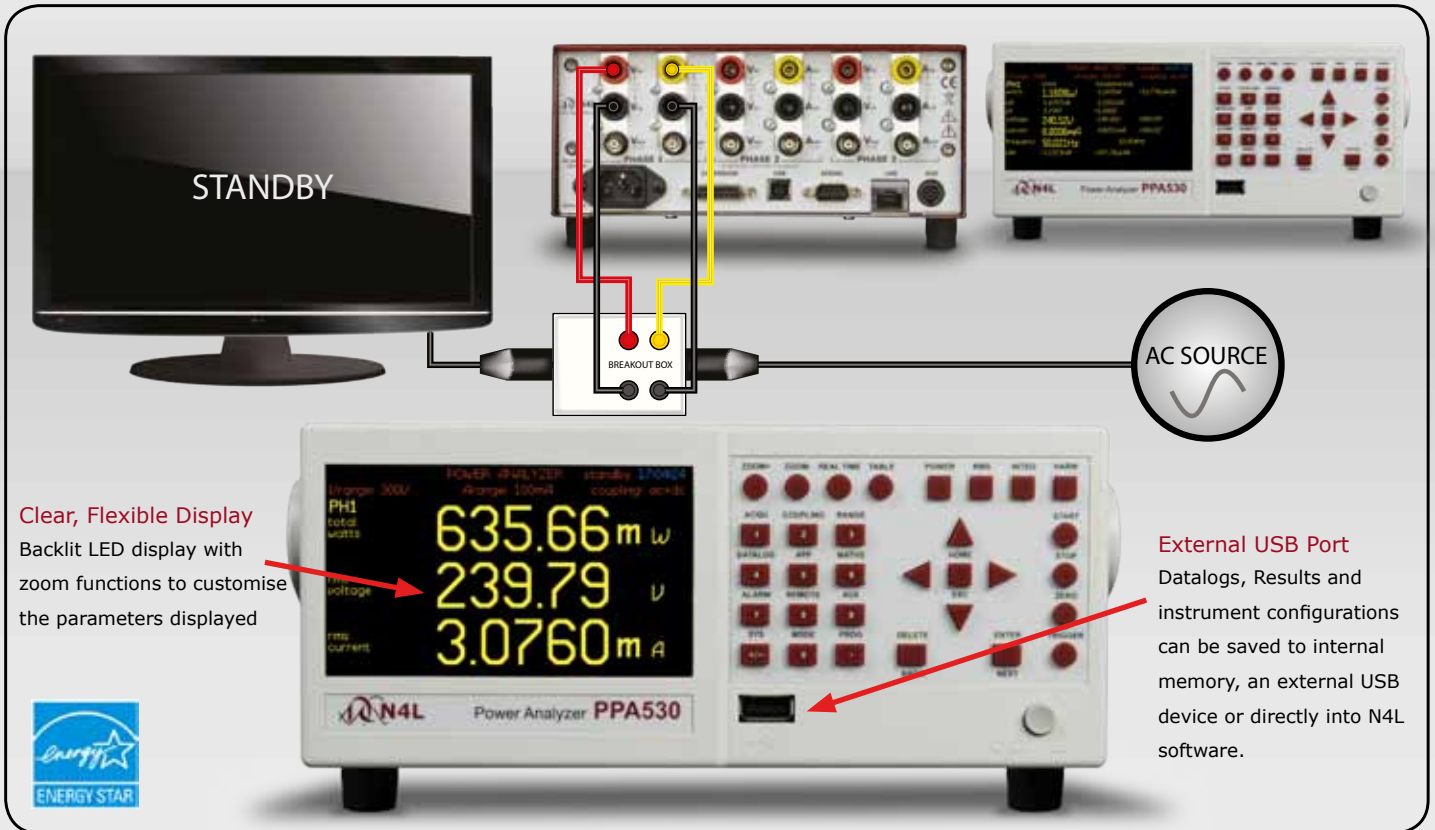


PPA15xx

Example Applications

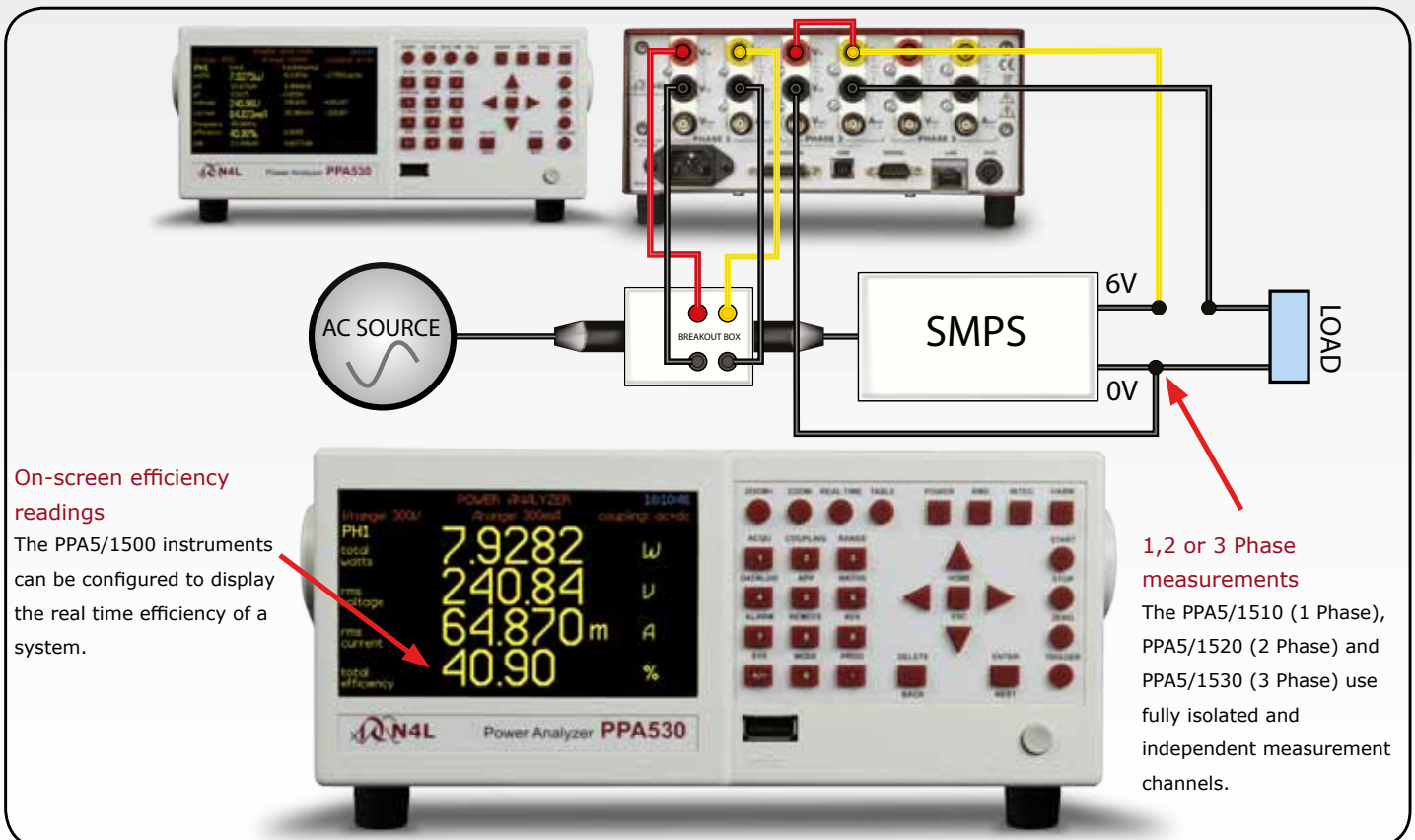
Example Application : Standby Power Measurement IEC62301/EN50564

The PPA5xx and PPA15xx are the perfect instruments for tests such as EN50564 Standby Power Testing. PC software that provides simple testing and reporting for EN50564 is available from the N4L website.



Example Application : AC-DC Power Supply Efficiency Testing using a PPA500/PPA1500

The PPA5/1520 or PPA5/1530 can be used in 2 Phase 2 Wattmeter configuration for efficiency testing of power supplies, ballasts and many other devices.



ACCESSORIES

High Performance Voltage Attenuating Probes			
Model	Voltage Range	Frequency Range	Details
TT-HV250	2500Vpk	300MHz	High Voltage Probe (Passive) 2.5kVpk 100:1
TTV-HVP	15000Vpk	50MHz	High Voltage Probe (Passive) 15kVpk 1000:1
ATT10	30Vpk	30MHz	10:1 Voltage Attenuator Box (For use in conjunction with HV Probes when output voltage of probe is >3Vpk, BNC Input/BNC Output)
ATT20	60Vpk	30MHz	20:1 Voltage Attenuator Box (For use in conjunction with HV Probes when output voltage of probe is >3Vpk, BNC Input/BNC Output)
ULCP	3000Vpk	2MHz	1000:1 Ultra Low Capacitance Probe (Active), For use in applications such as Ballast Testing (<1pF Capacitance)



TT-HV250 2.5kVpk Probes



TTV-HVP 15kVpk Probes



ATT10



ULCP

High Performance External Current Measurement Options					
Model Number	Measuring Range	Frequency Range	Basic Accuracy	Phase Accuracy	Details
HF003	3Arms - 30Apk	DC - 2MHz	470mΩ (±0.1%)	0.0001° / kHz	3Arms External Current Shunt, BNC Output (Use with PPA External Input)
HF006	6Arms - 60Apk	DC - 2MHz	100mΩ (±0.1%)	0.001° / kHz	6Arms External Current Shunt, BNC Output (Use with PPA External Input)
HF020	20Arms - 200Apk	DC - 2MHz	10mΩ (±0.1%)	0.01° / kHz	20Arms External Current Shunt, BNC Output (Use with PPA External Input)
HF100	100Arms - 1000Apk	DC - 2MHz	1mΩ (±0.1%)	0.05° / kHz	100Arms External Current Shunt, BNC Output (Use with PPA External Input)
HF200	200Arms - 2000Apk	DC - 2MHz	0.5mΩ (±0.1%)	0.1° / kHz	200Arms External Current Shunt, BNC Output (Use with PPA External Input)
HF500	500Arms - 5000Apk	DC - 2MHz	0.2mΩ (±0.1%)	0.1° / kHz	500Arms External Current Shunt, BNC Output (Use with PPA External Input)



External Shunt HF-003



External Shunt HF-100



External Shunt HF-200



External Shunt HF-500

Probe/Current Clamp Transformer: AC							
Model Number	Measuring range	Frequency range	Accuracy	Details	Clamp diameter	Category	
M3 UB 50A-1V	100mA ~ 50A	40Hz ~ 5kHz	1%	100mA to 50A AC Current Clamp	15mmx17mm	600V CATIII	
M3 U 100A-1V	1A ~ 100A	40Hz ~ 5kHz	1%	1A to 100A AC Current Clamp	15mmx17mm	600V CATIII	
S UE 200A-1V	1A ~ 200A	40Hz ~ 5kHz	1%	1 A to 200A AC Current Clamp	50mm ø	600V CATIII	
S UE 250 500 1000-1V	1A ~ 250A/500A/1000A	40Hz ~ 5kHz	1%(250A) 0.5%(500+1000A)	1 A to 250/500/1000A AC Current Clamp	50mm ø	600V CATIII	
US UE 1000A-1V	1A ~ 1000A	40Hz ~ 5kHz	1%	1A to 1000A AC Current Clamp	43mm ø	600V CATIII	
SM UE 1000A-1V	0.5A ~ 1000A(1%>100A)	15Hz ~ 15kHz	1%	0.5A to 1000A AC Current Clamp	54mm ø	600V CATIII	
SM UB 1000A-1V	0.5A ~ 1000A(0.5%>10A)	15Hz ~ 15kHz	0.5%	0.5A to 1000A AC Current Clamp	54mm ø	600V CATIII	
P32 UE 1000A-1V	5A ~ 1000A	40Hz ~ 5kHz	1%	5 A to 1000A AC Current Clamp	83mm ø (125mmx47mm or 100mm x58mm)	600V CATIII	
P32 UE 3000A-1V	5A ~ 3000A	40Hz ~ 5kHz	1%	5 A to 3000A AC Current Clamp	83mm ø	600V CATIII	



Current Clamp M3-UB 50A-1V



Current Clamp S-UE 200A-1V



Current Clamp SM-UB 1000A-1V



Current Clamp P32-UE 1000A-1V

Probe / Current Clamp (Hall effect): AC + DC

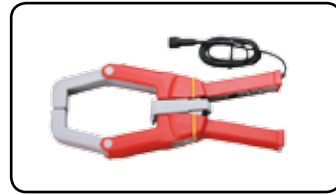
Model number	Measuring range	Frequency range	Accuracy	Details	Clamp diameter	Category
SC 3C 100A-1V	1A ~ 100A	DC ~ 5kHz	2%	1A to 100A AC+DC Current Clamp	50mm ϕ	600V CATIII
SC 3C 1000A-1V	1A ~ 1000A	DC ~ 2kHz	1%	1A to 1000A AC+DC Current Clamp	59mm ϕ	600V CATIII
P20 3C 2000A-2V	40A ~ 1000/2000A	DC ~ 2kHz	1%	40A to 2000A AC+DC Current Clamp	83mm ϕ	600V CATIII
P40 3C 4000A-2V	40A ~ 2000/4000A	DC ~ 2kHz	1.5%	40A to 4000A AC+DC Current Clamp	83mm ϕ	600V CATIII
P50 3C 5000A-2V	50A ~ 1000/5000A	DC ~ 2kHz	1.5%	50A to 5000A AC+DC Current Clamp	83mm ϕ	600V CATIII



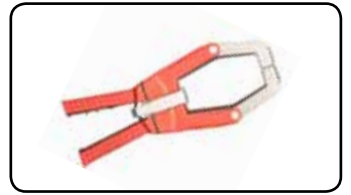
Current Clamp SC 3C 100A-1V



Current Clamp SC 3C 1000A-1V



Current Clamp P20 3C 2000A-2V



Current Clamp P50 3C 5000A-2V

Rogowski Current Transducer: AC / Zero Flux Current Transducer: AC+DC

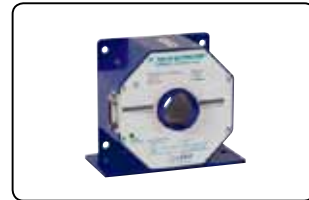
Model number	Measuring range	Frequency range	Accuracy	Details	Coil/Through Hole Circumference	Category
WR5000 Rogowski	1A ~ 5000A	1Hz ~ 1MHz	0.05%	1A to 5000A AC Rogowski Coil	600mm	600V CATIII
WR10000 Rogowski	1A ~ 10000A	1Hz ~ 1MHz	0.05%	1A to 5000A AC Rogowski Coil	600mm	600V CATIII
Danisense Zero Flux Current Transducer	0A ~ 200A	DC ~ 250kHz	0.01%	200A Zero Flux Current Transducer	27.6mm	600V CATIII
Danisense Zero Flux Current Transducer	0A ~ 600A	DC ~ 250kHz	0.01%	600A Zero Flux Current Transducer	27.6mm	600V CATIII
LEM IT 60-S Zero Flux Current Transducer	0A ~ 60A DC/pk (42Arms)	DC ~ 800kHz	0.01%	60A Zero Flux Current Transducer	26mm	600V CATIII
LEM IT 200-S Zero Flux Current Transducer	0A ~ 200A DC/pk (141Arms)	DC ~ 500kHz	0.01%	200A Zero Flux Current Transducer	26mm	600V CATIII



WR5000 Rogowski Coil



Danisense DS600



LEM IT 700-S

PPA500 SERIES MODELS

Phases	Model	Specification
1 Ph	PPA510	DC, 10mHz ~ 500kHz Normal: 100mApk ~ 300Apk x10: 10mApk ~ 30Apk
2 Ph	PPA520	
3 Ph	PPA530	

Phases	Model	Specification
1 Ph	PPA510-HC	DC, 10mHz ~ 500kHz Normal: 300mApk ~ 1000Apk x10: 30mApk ~ 100Apk
2 Ph	PPA520-HC	
3 Ph	PPA530-HC	

PPA500

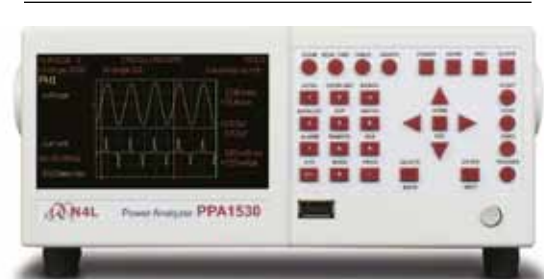


PPA1500 SERIES MODELS

Phases	Model	Specification
1 Ph	PPA1510	DC, 10mHz ~ 1MHz Normal: 100mApk ~ 300Apk x10: 10mApk ~ 30Apk
2 Ph	PPA1520	
3 Ph	PPA1530	

Phases	Model	Specification
1 Ph	PPA1510-HC	DC, 10mHz ~ 1MHz Normal: 300mApk ~ 1000Apk x10: 30mApk ~ 100Apk
2 Ph	PPA1520-HC	
3 Ph	PPA1530-HC	

PPA1500



PPA5/1530



Calibration and ISO17025 Certification



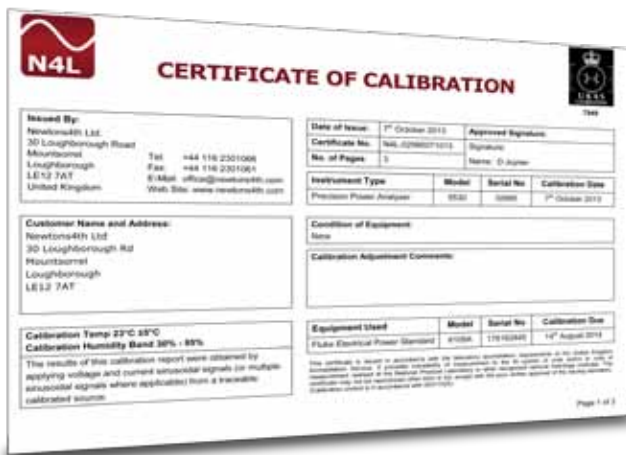
Newtons4th are an accredited UKAS Calibration laboratory, all PPA500 and PPA1500 Power Analyzers are supplied with an ISO17025 UKAS Calibration Certificate as standard. Calibration of N4L Power Analyzers is an integral and important part of our service to our clients, we offer quick turnaround times at a competitive price. Re-Calibration is also available at our international offices and various distributors throughout the world*.



Schedule of Accreditation

N4L's schedule of accreditation to ISO17025 is wide ranging and an overview of the schedule is detailed below, for more specific information please see the UKAS website to view the full accreditation schedule.

ISO17025 UKAS Accreditation Schedule		
	Signal Amplitude	Frequency Range
Voltage Sine Amplitude	1V to 1008V	16Hz to 850Hz
Voltage Harmonic Amplitude	0V to 302V	16Hz to 6kHz
Current Sinewave Amplitude	100mA to 48A	16Hz to 850Hz
Current Harmonic Amplitude	0A to 15A	16Hz to 6kHz
Current to Voltage Phase Angle	-180° to +180°	16Hz to 850Hz
Apparent Power (VA Product)	100mVa to 48.4kVA	16Hz to 850Hz
AC Power	0W to 48.4kW	16Hz to 850Hz
Current Harmonic Amplitude to IEC61000-4-7	0A to 6A	16Hz to 6kHz
Flicker to IEC61000-4-15	Pinst(Sinusoidal Modulation)	As per IEC61000
	Pinst(Rectangular Modulation)	
	Pst	
	Frequency Changes	
	Distorted Voltage with Multiple Zero Crossings	
	Harmonics with Sidebands	
	Phase Jumps	
	Rectangular Changes with Duty Cycle	



Due to the specialist nature of Power Measurement Instrumentation Calibration, N4L utilise both commercially available calibration equipment (such as the Fluke 6105A for UKAS Certification) along with N4L bespoke designed signal generation equipment in order to calibrate our instruments over the full frequency range (up to 2MHz). Calibration over the full frequency range is uncommon given that such signal generation equipment is not commercially available. When supplied with an N4L analyzer, all customers will receive a calibration certificate covering the complete frequency range.



*UKAS Calibration is available from N4L UK HQ only, details of calibration performed at other locations is subject to local accreditation, please contact your local office for more details.

SPECIFICATION

		PPA500		PPA1500			
Frequency Range							
		Normal	DC, 10mHz ~ 500kHz	Normal	DC, 10mHz ~ 1MHz		
		x10	DC, 10mHz ~ 100kHz	x10	DC, 10mHz ~ 100kHz		
Voltage Input							
Internal	Range	Normal	1Vpk ~ 2500Vpk(1000Vrms) in 8 ranges	Normal	1Vpk ~ 2500Vpk(1000Vrms) in 8 ranges		
	x10		100mVpk ~ 300Vpk(1000Vrms) in 8 ranges	x10	100mVpk ~ 300Vpk(1000Vrms) in 8 ranges		
Accuracy	Normal		0.05% Rdg+0.1% Rng+(0.005%×kHz Rdg)+5mV	Normal	0.05% Rdg+0.1% Rng+(0.005%×kHz Rdg)+5mV		
	x10		0.05% Rdg+0.1% Rng+(0.01%×kHz Rdg)+1mV	x10	0.05% Rdg+0.1% Rng+(0.01%×kHz Rdg)+1mV		
External	Range	1mVpk ~ 3Vpk in 8 ranges [BNC connector 3Vpk max input]		1mVpk ~ 3Vpk in 8 ranges [BNC connector 3Vpk max input]			
	Accuracy	0.05% Rdg+0.1% Rng+(0.005%×kHz Rdg)+5uV		0.05% Rdg+0.1% Rng+(0.005%×kHz Rdg)+5uV			
40-850Hz		As per standard spec with Rng error reduced from +0.1% V Rng to 0.05%		As per standard spec with Rng error reduced from +0.1% V Rng to 0.05%			
Current Input							
Internal	20Arms Current Shunt 4mm safety connectors	Ranges	Normal	100mApk ~ 300Apk(20Arms) in 8 ranges	Ranges	Normal	100mApk ~ 300Apk(20Arms) in 8 ranges
			x10	10mApk ~ 30Apk in 8 ranges		x10	10mApk ~ 30Apk in 8 ranges
		Accuracy	Normal	0.05% Rdg + 0.1% Rng + (0.005% x kHz Rdg) + 500uA	Accuracy	Normal	0.05% Rdg + 0.1% Rng + (0.005% x kHz Rdg) + 500uA
			x10	0.05% Rdg + 0.1% Rng + (0.01% x kHz Rdg) + 100uA		x10	0.05% Rdg + 0.1% Rng + (0.01% x kHz Rdg) + 100uA
	30Arms Current Shunt 4mm safety connectors	Ranges	Normal	300mApk ~ 1000Apk(30Arms) in 8 ranges	Ranges	Normal	300mApk ~ 1000Apk(30Arms) in 8 ranges
			x10	30mApk ~ 100Apk in 8 ranges		x10	30mApk ~ 100Apk in 8 ranges
		Accuracy	Normal	0.05% Rdg + 0.1% Rng + (0.005% x kHz Rdg) + 1mA	Accuracy	Normal	0.05% Rdg + 0.1% Rng + (0.005% x kHz Rdg) + 1mA
			x10	0.05% Rdg + 0.1% Rng + (0.01% x kHz Rdg) + 300uA		x10	0.05% Rdg + 0.1% Rng + (0.01% x kHz Rdg) + 300uA
External input (External shunt Current sensor)	BNC Connector (Max input 3Vpk)	Ranges	1mVpk ~ 3Vpk in 8 ranges	Ranges	1mVpk ~ 3Vpk in 8 ranges		
		Accuracy	0.05% Rdg+0.1% Rng+(0.005%×kHz Rdg)+ 5uV	Accuracy	0.05% Rdg+0.1% Rng+(0.005%×kHz Rdg)+ 5uV		
40-850Hz		As per standard spec with Rng error reduced from +0.1% A Rng to 0.05%		As per standard spec with Rng error reduced from +0.1% A Rng to 0.05%			
Phase Accuracy							
		Normal	0.01deg+(0.01deg x kHz)	0.01deg+(0.01deg x kHz)			
		x10	0.01deg+(0.02deg x kHz)	0.01deg+(0.02deg x kHz)			
Power Accuracy							
		Normal	[0.1%+0.1%/pf+(0.01%×kHz)/pf] Rdg+0.1%VA Rng	[0.1%+0.1%/pf+(0.01%×kHz)/pf] Rdg+0.1%VA Rng			
		x10	[0.1%+0.1%/pf+(0.02%×kHz)/pf] Rdg+0.1%VA Rng	[0.1%+0.1%/pf+(0.02%×kHz)/pf] Rdg+0.1%VA Rng			
40-850Hz		As per standard spec with Rng error reduced from +0.1% VA Rng to 0.05%		As per standard spec with Rng error reduced from +0.1% VA Rng to 0.05%			
Minimum Current Measurement at Full Accuracy							
PPA5/1500 20A		1mA					
PPA5/1500 30A		3mA					
General							
Crest Factor	20(Voltage and Current)						
Sample Rate	1Ms/s on all channels, No-Gap			1Ms/s on all channels, No-Gap			
IEC Modes	IEC62301/EN50564 Standby Power			IEC62301/EN50564 Standby Power			
Application Modes	Ballast, Inrush, Standby Power			Ballast, Inrush, Standby Power			
CMRR - Common Mode Rejection Ratio							
		250V @ 50Hz - ≥ 1mA (150dB)					
		100V @ 100kHz - ≥ 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, +ve Pk, -ve Pk							
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			No-Gap analysis, Minimum window 10ms			
Memory	16,000 records			16,000 records			
Communication Ports							
RS232	Baud rate up to 38.4kbps,RTS/CTS flow control						
LAN	(Option L) 10/100 Base-T Ethernet auto sensing			(Fitted as standard) 10/100 Base-T Ethernet auto sensing			
GPIB	(Option G-E) IEEE488.2 Compatible - via external communications box			(Option G-E) IEEE488.2 Compatible - via external communications box			
USB	USB 2.0 and 1.1 compatible						
Extension	Fitted as Standard						
Standard Accessories							
Leads	Power, RS232, USB			Power, RS232, USB			
Connection Cables	20A (Std version) or 36A (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						
CD-ROM	CommView2 (RS232/USB/LAN), Command line, Script based communication software (Datalogging software available as free of charge download)						
Documents	User manual, Communications manual, Calibration certificate, Quick start guide						
Mechanical/Environmental							
Input Impedance	Voltage Attenuator and External Inputs 1MΩ 30pF						
Display	480x272 dot full colour TFT, White LED Backlit						
Dimensions	92Hx215Wx312D 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, 35VAmx						
Operating	23°C ± 5°C Ambient Temperature (or air intake temperature when rack mounted), 20-90% Non-Condensing Relative Humidity.						
Voltage Attenuator Overload Capability							
20mS	2.5KV PK (1.5KV rms)						
5Sec	2.5KV PK (1.1KV rms)						
Continuous	2.5KV PK (1.0KV rms)						

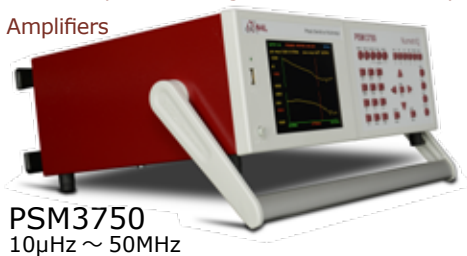
PRODUCT COMPARISON

	PPA500	PPA1500	PPA3500	PPA4500	PPA5500
Basic Accuracy					
V, A rdg error	0.05%	0.05%	0.04%	0.03%	0.01%
Power rdg error	0.10%	0.10%	0.06%	0.04%	0.03%
Phase Options					
Internal	1 ~ 3	1 ~ 3	1 ~ 6	1 ~ 3	1 ~ 3
Master/Slave operation	—	—	—	4 ~ 6	4 ~ 6
Bandwidth					
20 & 30A Shunt	DC ~ 500kHz	DC ~ 1MHz	DC ~ 1MHz	—	—
10 & 30A Shunt	—	—	—	DC ~ 2MHz	DC ~ 2MHz
50A Shunt	—	—	—	DC ~ 1MHz	DC ~ 1MHz
Voltage Input					
Max input voltage	2500Vpk (1kVrms)	2500Vpk (1kVrms)	2500Vpk (1kVrms)	3000Vpk (1kVrms)	3000Vpk (1kVrms)
No. of ranges	8	8	8	8	9
Direct Current Input					
10Arms model	—	—	—	○	○
20Arms model	○	○	○	—	—
30Arms model	○	○	○	○	○
50Arms model	—	—	—	○	○
No. of ranges	8	8	8	8	9
Features					
Scope and Graph Modes	—	○	○	○	○
USB Memory port	○	○	○	○	○
LAN Port	○	○	○	○	○
GPIB Port	○	○	○	○	○
RS232 Port	○	○	○	○	○
Real time clock	○	○	○	○	○
19in Rack mount option	○	○	○	○	○
Torque and Speed	—	—	○	○	○
IEC61000 Mode	—	—	—	—	○
PWM Motor Drive Mode	—	○ (Via Parallel Filtering Options)	○	○	○
Oscilloscope/Graphic	—	○	○	○	○
Transformer Mode	—	—	○	○	○
PWM Filter Options	—	2	7	7	7
Speed/Harmonics/Sec	300/sec	300/sec	300/sec	600/sec	1800/sec
Internal Datalogging	4 Parameters	4 Parameters	32 Parameters	16 Parameters	16 Parameters
Datalog Records	16000	16000	5M	5M	10M
ABD0100.1.8 Mode	—	—	—	—	○
Internal Memory	192kB	192kB	500MB	500MB	1GB
Harmonics	50	50	100	100	417
Minimum Window Size	10ms	5ms	5ms	2ms	2ms
Dimensions - Excl. Feet H x W x D (mm)	92 x 215 x 312	92 x 215 x 312	92 x 404 x 346	130 x 400 x 315	130 x 400 x 315
Weight	3.3 - 4kg	3.3 - 4kg	5 - 7kg	5.4 - 6kg	5.4 - 6kg

— Not Applicable ○ Option ● Standard

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 also includes Frequency Response and Impedance Analyzers, Selective Level Meters and Laboratory Power Amplifiers



PSM3750
10µHz ~ 50MHz



PSM17xx
10µHz ~ 35MHz

Applications

- Power supply phase margin and gain margin (FRA)
- Inductance, Capacitance and Resistance (LCR)
- Analysis of mechanical vibration (HARM)
- Phase Angle Voltmeter (PAV)

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



THE QUEEN'S AWARDS
FOR ENTERPRISE:
INNOVATION
2010

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

Distributed by:

Newtons4th Ltd
1 Bede Island Road
Leicester
LE2 7EA
UK
Phone: +44 (0)116 230 1066
Fax: +44 (0)116 230 1061
Email: sales@newtons4th.com
Web: www.newtons4th.com