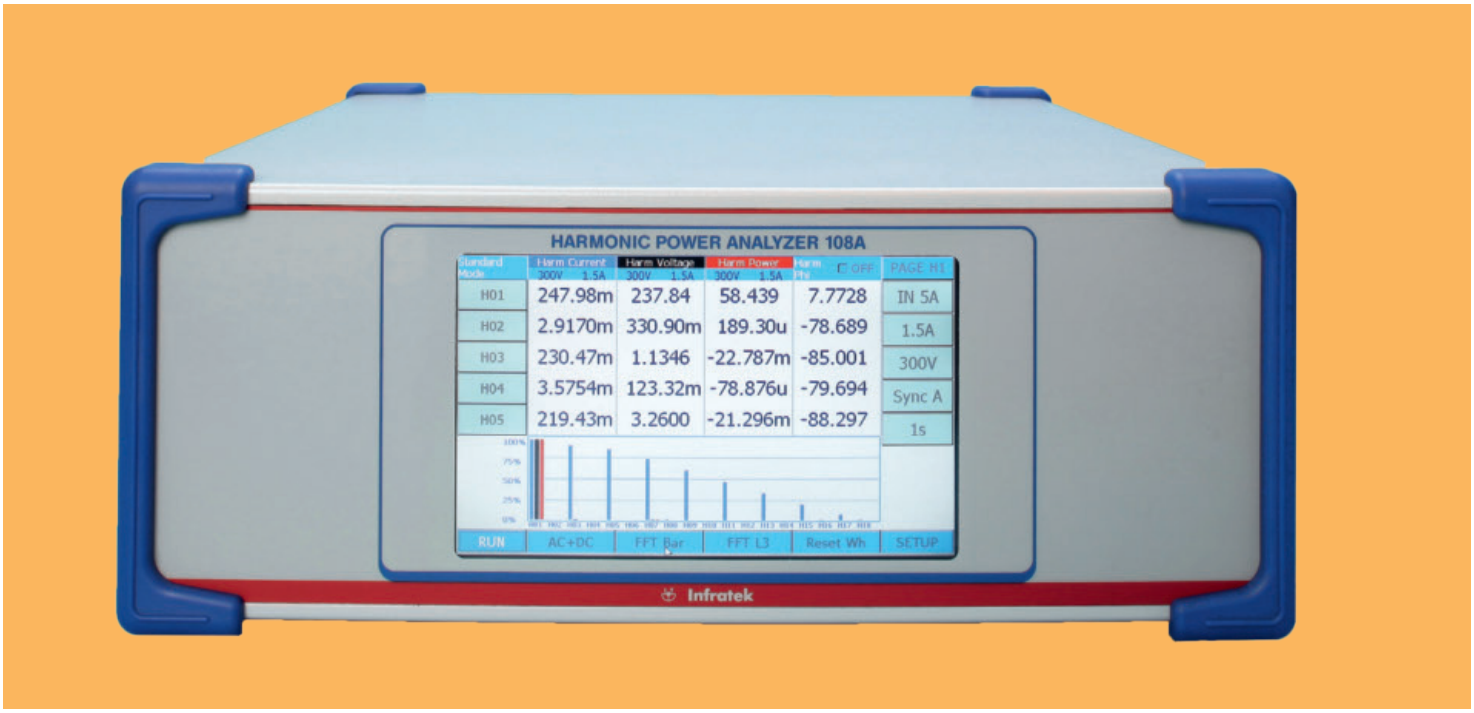
INFRATEK 108A SINGLE- TO SIX PHASE POWER ANALYZER



THE MODEL 108A UNIVERSAL HIGH PRECISION POWER ANALYZER MEASURES 280 ELECTRICAL QUANTITIES ON EVERY PHASE. ENERGIES, HARMONICS, MOTOR- AND TRANSFORMER VALUES, POWER SUMS, POWER RATIOS, AND PROCESS INPUTS CAN BE DISPLAYED, OR READ VIA INTERFACE AT ANY TIME.

FEATURES:

- Available as 1-, 2-, 3-, 4-, 5-, 6-phase instrument
- Highest precision available: 0.02% reading + 0.02% range
- 18 bit resolution. High accuracy at 10% full scale
- Wide angle, touch-screen TFT color display (800 x 480 pixels)
- Simple to operate, most settings in 2 steps (2 touches)
- Standard-, logging-, Transient-, Power-Speed measure functions
- Very fast data transfer; up to 3400 values per second
- High DC precision for solar applications
- 4 current inputs: 1mA – 1A, 15mA – 5A, 1A – 50A, Shunt
- Voltage Ranges: 0.3V to 1000V
- Interfaces: Ethernet, RS-232 / USB, IEEE-488, Process
- Interface commands for fast data transmission
- Operating software under Windows
- Reasonably priced by virtue of smart design
- Simple servicing, modular concept, pre-calibrated inputs
- Optional high precision, broadband, current sensors
- Optional 30A coaxial shunt (current viewing resistors)
- 1G Byte Memory for storing measurement data
- 6 analog inputs and 2 frequency inputs, 12 analog outputs

HIGH PERFORMANCE, SIMPLE TO USE

The Infratek 108A High Precision Power Analyzer is available in 1-, 2-, 3-, 4-, 5-, or 6- phase versions. All voltage inputs 0.3V up to 1500Vpeak and all current inputs 1.5mA up to 1A; 15mA up to 5A; 1A up to 40A; and shunt inputs 60mV up to 6V are potential free and exhibit low noise, high common mode suppression, excellent DC-stability, Wide frequency range (DC-2MHz) and very low self-heating on current inputs. There is no need to fiddle with dc-compensation, or changing current plug-ins. All is built into the input sections of the Power Analyzer, ready for measurements. It is simple to use, your intuition will guide you to operate the Power Analyzer touch screen correctly. Almost all setting changes are accomplished with two touches on the display screen or two clicks with the wireless mouse.

4 MEASUREMENT FUNTIONS

Four different measure functions enhance the 108A capabilities.

Standard Measure Mode

In the Standard Measure Mode 280 quantities per phase are measured without gap and are continuously updated. Values can be displayed on four display pages, can be saved in internal memory, or can be transferred via Interface to a computer. The display shows voltage, current, and power wave forms. Harmonics and bar graphs can be viewed on 5 pages. Two electric motors can be tested simultaneously. External Speed and torque inputs are optionally available. Transformer values are implemented too.

Logging Measure Mode

This measure mode is suitable for very fast measurements or for long time averaging of data. It is possible obtaining 6 datasets of a 6-phase instrument within 20ms or 6 datasets per 10 minutes. From every phase you obtain 8 values: frequency, rms current, rms voltage, power, power factor, apparent power, energy Wh, and apparent energy VAh.

Transient Measure Mode

You can catch current-, voltage-, and power wave forms in a start-up on transient mode up to 6 phases simultaneously or you can view all the wave forms at a critical operating point. Sections of the wave forms can be expanded by simply touching one of the 4 “Zoom Sectors”.

Power-Speed Measure Mode

This measure mode analyzes the performance of devices such as electric cars. In 20ms intervals the following data are stored in internal memory: rms current, rms voltage, power, apparent power, energy, apparent energy, and rpm of a shaft. At end of measurement, (maximum 11 seconds) data versus time are displayed.

SPECIFICATIONS 108A

Voltage

%reading + % range

8 measuring ranges: 0.3 – 1 – 3 – 10 – 30 – 100 – 300 – 1000V			Bandwidth DC-2MHz
Coupling: AC or AC + DC	Common mode rejection:		100dB at 100kHz
Input impedance: 1MΩ / 15pF. Floating input			max. 1000Vrms
Crest Factor 15:1 at 10% fs. Typical accuracy at 10% is 0.1%			fs = full scale
Temperature coefficient: 0.004% / °C			
Standard accuracy 23°C ±1°C. 3V to 600V			**High precision** 10V to 600V
45 to 65Hz	0.08 + 0.08		0.02 + 0.02
3 to 1000Hz	0.1 + 0.1		0.03 + 0.03
1 to 10kHz	0.2 + 0.2		0.1 + 0.1
10 to 100kHz	(0.2 + 0.2) +(0.2 + 0.2) * log(f/1kHz)	(0.2 + 0.2) +(0.2 + 0.2) * log(f/1kHz)	
DC[1]/100-500kHz[1]	0.1 + 0.1 / 0.012·f(kHz)		

Current

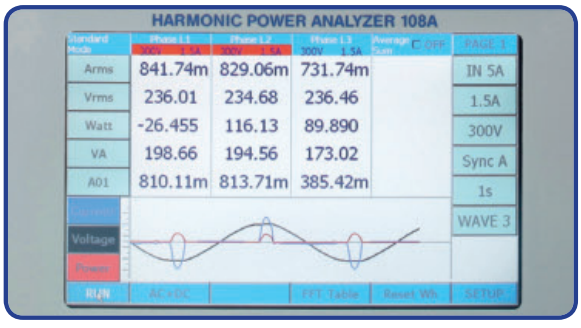
%reading + % range

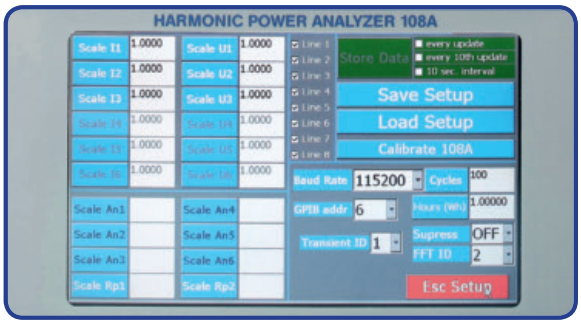
4 inputs: In30A, In5A, In1A, shunt. Floating inputs			max. 1000Vrms to earth
In1A: 6 ranges 1.5[1] - 5 - 15 – 50 – 150 – 500 – 1500mA. DC-100kHz			max. 2A continuous
In5A: 6 ranges: 15[1] – 50 – 150 – 500mA – 1.5 – 5 – 15A. DC-100kHz			max. 7A continuous
In30A: 4 ranges: 1[1] – 3 – 10 – 30 – 100A. DC-100kHz			max. 40A/30A cont., 1-3ph/4-6ph
Shunt: 60 – 200 – 600mV – 2 – 6V. DC-100kHz			max. 30V continuous
Coupling: AC or AC + DC	Common mode rejection		115dB at 100kHz
Crest factor 15:1 at 10% fs. Typical accuracy at 10% fs is 0.1%			fs = full scale
Temperature coefficient: 0.004% / °C			
Standard accuracy 23°C ± 1°C			**High precision In1A/In5A**
Input	**In1A,In5A,Shunt**	**In30A**	15,50,150,500mA,1A/150,500mA,1.5,5A
45 to 65Hz	0.08 + 0.08	0.08 + 0.08	0.02 + 0.02
3 to 1000Hz	0.1 + 0.1	0.2 + 0.2	0.03 + 0.03
1 to 10kHz	0.15 + 0.15		0.15 + 0.15
10 to 100kHz	(0.15+0.15)+ (0.5+0.5)*log(f/1kHz)	(0.15+0.15)+ (0.5+0.5)*log(f/1kHz)	
DC[1]/100-500kHz[1]	0.1 + 0.1/ 0.023·f(kHz)		
Input	**Coax. 30A** (Option) instead of In30A		Exposure of current inputs to their max. value will result in additional errors[1]
45 to 65Hz	0.05 + 0.05		In1A: 0.03% * I^2
3 to 1000Hz	0.08 + 0.08		In5A: 0.003% * I^2
Input	**0-100A** precision current sensor (Option 04) connected to In1A input		In30A: 0.0001% * I^2
3 to 100Hz	0.05 + 0.05		Coax: 0.0001% * I^2
100 to 1000Hz	0.1 + 0.1		

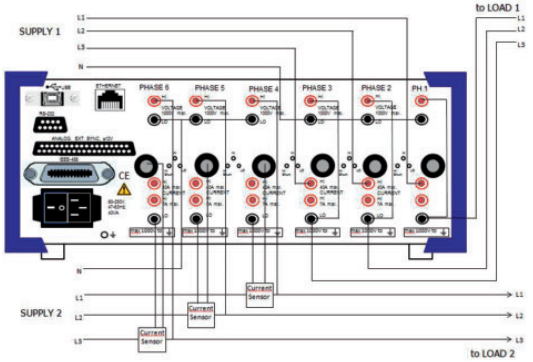
Power

%reading + % range

W range = voltage range times current range						112 power ranges
Standard accuracy 23°C ± 1°C						**High precision**
Input	**PF**	**In1A, In5A, Shunt**				**In1A, In5A, Shunt**
45 to 65Hz	0-1	0.16 + 0.16				0.04 + 0.04
3 to 1000Hz	0-1	0.2 + 0.2				0.1 + 0.1
1 to 20kHz	0-1	0.2 +(0.2 +0.08 * k1/kHz)				0.2 + (0.2 + 0.08 * k1/kHz)
20 to 100kHz	1	%error (A+V)				%error (A+V)
DC[1]/100-500kHz[1]	1	0.2 + 0.2/ add %error (V+A)				
Input	**PF**	**In30A**		**Current Sensor 0-100A**		**Coax. 30A** (Option)
45 to 65Hz	0-1	0.16 + 0.16		0.1 + 0.1		0.08 + 0.08
3 to 1000Hz	0-1	0.2+(0.2+0.1*k1/0.1kHz)		0.2+(0.2+0.1*k1/0.1kHz)		0.08 + (0.08+0.05 k1/0.1kHz)
DC[1]		0.2 + 0.2		0.1 + 0.1		0.2 + 0.2
W Linearity	130%	100%	50%	10%	5%	Typical linearity of voltage, current and power
Volt	130.00	100.00	49.985	9.9992	4.9990	$k1 = (2 - PF^4) / (1+PF^2)$
Ampere	6.5004	5.0014	2.5020	500.82m	250.40m	[1] Typical max. error
Watt PF=1	844.74	500.07	125.05	5.0056	1.2522	







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