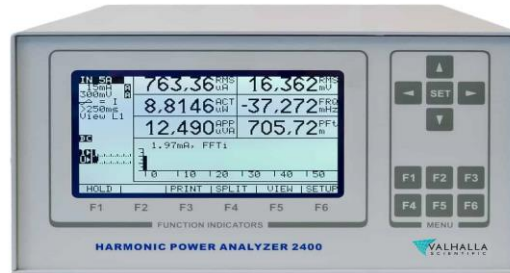


## Power Analyzer 2410-1HE



High-performance precision in both single and three-phases: a wattmeter, oscilloscope, and power spectrum analyzer in one. The 2400 power analyzer measures, computes and displays critical power variables so you can concentrate on more efficient & reliable testing. The 2400 Series provides simultaneous, precise voltage and current measurements while monitoring and displaying the power parameters you need in the format that best fits your application.

### Extraordinary Features

- The analyzer inputs are all galvanically isolated.
- Broad band DC-300kHz.
- Wide input range (0.3V – 1000V, 15mA – 40A).
- Exceptional common mode rejection for use in frequency inverter driven systems.
- The accuracy is 0.1% (0.05% versions are available).
- The bright LCD monitor displays up to 10 measured values in well legible 9mm high numbers.
- The Three-Phase Power Analyzer puts up to 32 measured values on the screen.

# Technical Specifications

Voltage	8 ranges: 0.3 V, 1 V, 3 V, 10 V, 30 V, 100 V, 300 V, 1000 V Frequency range Crest Factor Input Impedance Common Mode Standard accuracy 23°C; rms, mean, rectified mean; 0.3V typical 1 Hz-1 kHz $\pm(0.1 \% \text{ rdg} + 0.1 \% \text{ range})$ DC, 1 kHz-10 kHz $\pm(0.2 \% \text{ rdg} + 0.2 \% \text{ range})$ 10 kHz-100 kHz $\pm(0.3 \% / \text{ range} + 0.04 \% / \text{kHz rdg})$ 100 kHz-300 kHz $\pm(0.3 \% / \text{ range} + 0.04 \% / \text{kHz rdg})$ , typical	DC, 0.1 Hz - 1 MHz 3:1 at 50 % full scale (fs) 1 MOhm 160 dB/100 dB Improved accuracy $\pm(0.05 \% \text{ rdg} + 0.07 \% \text{ range})$
Current	13 ranges: 1.5 mA, 5 mA, 15 mA, 50 mA, 150 mA, 500 mA, 1.5 A, 5 A; 1, 3, 10, 30, 100 A Frequency range Crest Factor Common Mode Standard accuracy 23°C; 1 A-, 5 A-, shunt input 1 Hz-1 kHz $\pm(0.1 \% \text{ rdg} + 0.1 \% \text{ rng})$ DC, 1 kHz-10 kHz $\pm(0.2 \% \text{ rdg} + 0.2 \% \text{ rng})$ 10 kHz-100 kHz $\pm(0.3 \% \text{ range} + 0.04 \% / \text{kHz rdg})$ 100 kHz-300 kHz $\pm(0.3 \% \text{ range} + 0.04 \% / \text{kHz rdg})$ , typical	Max. 1 A, 5 A, 30 A, resp. DC, 0.1 Hz-300 kHz / 1 MHz 3:1 at 50 % full scale (fs) 160 dB/120 dB Lowest ranges 1.5 mA, 15 mA, 1 A: typical. Improved accuracy 1Hz-400 Hz $\pm(0.05 \% \text{ rdg} + 0.07 \% \text{ range})$
Power	104 ranges corresponding to the products V x A. Frequency range 45 Hz-65 Hz 1 Hz-1 kHz DC, 1 kHz-10 kHz 10 kHz-100 kHz(0.1 % rdg + 0.01 % range) Add accuracy percentage figures of current and voltage, +0.04 %/kHz PF	DC, 0.1 Hz-300 kHz PF= 0 to $\pm 0.1$ PF= 0 to $\pm 1$ PF= 0 to $\pm 1$ PF=1
Frequency	0.1 Hz-400 kHz, V triggered; Accuracy $\pm 0.1 \%$ .	
Computed Values	Accuracy; Reactive Power, $\text{Var} = \pm(\text{VA}2 - \text{W}2) / 2$ , Apparent Power: $\text{VA} = \text{Arms Vrms}$ ; Power Factor: $\text{PF} = \text{W} / \text{VA}$ ; Crest Factor: $\text{CF} = \text{Ap} / \text{Arms}$ , $\text{Vp} / \text{Vrms}$ ; Add accuracy percentage figures of values involved Form Factor: $\text{FF} = \text{At} / \text{Arms}$ , $\text{Vt} / \text{Vrms}$ ; Impedance: $\text{Z} = \text{Vrms} / \text{Arms}$ ; Total Harm Dist: $\text{THD} = (\text{Irms}2 - \text{Ifund}2) / \text{Irms}$	in computation.
Integrator	Energy, Charge; Accuracy Wh, Vah, Varh, Ah; Basic accuracy of integrated quantity.	
Harmonic Analysis	Frequency range of fundamental 2.5 Hz-100 kHz Range of harmonic Accuracy, Harmonic current and voltage 2 Hz-1 kHz $\pm(0.1 \% \text{ rdg} + 0.1 \% \text{ range})$ 1 kHz-10 kHz $\pm(0.5 \% \text{ rdg} + 0.5 \% \text{ range})$ 10 kHz-100 kHz $\pm(0.7 \% \text{ range} + 0.1 \% / \text{kHz rdg})$ , typical	1-99
Display	Blue liquid crystal graphic display with FL backlight 64x120 mm; 128 x 240 pixels	
Power	AC, 50-400 Hz; Fuse: Power	85 V-240 V; 2 A, 15 VA
Dielectric Strength	Inputs to case or power supply Line input to case Input to Input	2.5 kV/50 Hz/1 minute 1.5 kV/50 Hz/ 1 minute 4 kV/50 Hz/1 minute
Dimension	H x W x D; Weight	150 x 235 x 320 mm; 4 kg
Options	IEEE-488-2, RS232, Centronics printer output 4 programmable analog outputs; single-, sum-, or average values 4 analog inputs 0- $\pm 5$ V, input impedance 200 k $\Omega$ 4 analog inputs, 0- $\pm 10$ V, input impedance 200 k $\Omega$ Rack Mounting Kit Windows Operating Software 95, 98, 2000, NT, XP; transformer-motor testing	0- $\pm 5$ V, accuracy 0.2 % 0- $\pm 5$ V, accuracy 0.2 % 0- $\pm 10$ V accuracy 0.2 %
1.5mA-1A Inp/ Shunt Input	1 A input Hi against ILo Shunt Hi Shunt Lo 1 A input, mA: 1.5, 5, 15, 50, 150, 500, 1500 Shunt input, mV: 60, 600, 6000, 60000 Input impedance: 60k	1 A input: set scaling to 0.1 Shunt input: 60 mV corresponds to 1.0000 A