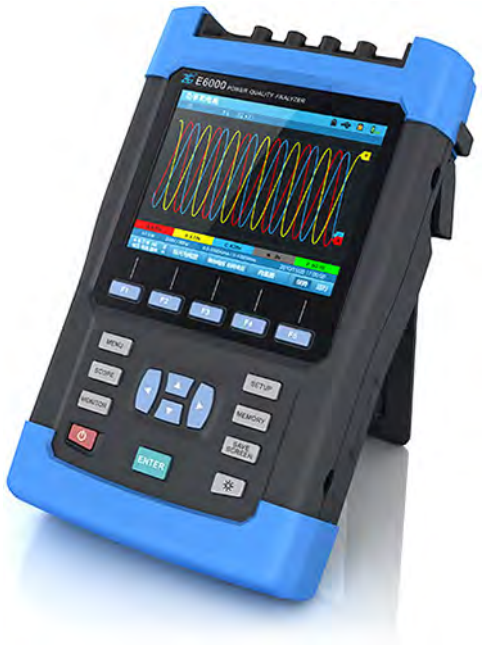
E6000

Handheld Power Quality Analyzer

The E6000 Handheld Power Quality and Energy Analyzer offer the best in power quality analysis and introduce, for the first time ever, the ability to monetarily quantify energy losses.

The E6000 Handheld Power Quality and Energy Analyzer help locate, predict, prevent, and troubleshoot power quality problems in three-phase and single-phase power distribution systems. Additionally, the GFUVE-patented energy loss algorithm, Unified Power Measurement, measures and quantifies energy losses due to harmonics and unbalance issues, allowing the user to pinpoint the origin of energy waste within a system.



Features

1. 3s statistical interval, continuously record 120h
2. Support multi-brand current transformer
3. Up to 8G data storage space
4. Record up to 461 power energy parameters simultaneously
5. Up to 6500 Screenshots saved
6. Support periodic recording function
7. Up to 3.9M/s USB high-speed transfer
8. Customized international report generation

Functions

1. Energy loss calculator: Classic active and reactive power measurements, unbalance and harmonic power, are quantified to pinpoint true system energy losses in dollars (other local currencies available).
2. Power inverter efficiency: Simultaneously measure AC output power for power electronics systems.
3. PowerWave data capture: E6000 analyzers capture fast RMS data, show half-cycle and waveforms to characterize electrical system dynamics (generator start-ups, UPS switching etc.).
4. Waveform capture: E6000 capture 50/60 cycles (50/60Hz) of each event that is detected in all modes, without set-up.
5. Automatic Transient E6000 analyzers capture 200 kHz waveform data on all phases simultaneously up to 1000V.
6. Fully Class-A compliant: E6000 analyzers conduct tests according to the stringent international IEC 61000-4-30 Class-A standard.
7. Mains signaling: E6000 analyzers measure interference from ripple control signals at specific frequencies.
8. Troubleshoot: Analyze the trends using the cursors and zoom tools.
9. Highest safety rating in the industry: 600 V CAT IV/1000 V CAT III rated for use at the service entrance.

10. Measure all three phases and neutral: With included four flexible current probes with enhanced thin flex designed to fit into the tightest places.
11. Automatic Trending: Every measurement is always automatically recorded, without any set-up.
12. System-Monitor: Ten power quality parameters on one screen according to EN50160 power quality standard.
13. Logger function: Configure for any test condition with memory for up to 600 parameters at user defined intervals.
14. View graphs and generate reports: With included analysis software.
15. Battery life: Up to 5 hours operating time per charge on Li-ion battery pack.

Display

Parameters

Electrical parameters	
Voltage	rms, ava, pk+, pk-, rms-1/2, CF
Frequency	Freq
Current	rms, ava, pk+, pk-, rms-1/2, CF
Power & energy	P, S, Q, PF, DPF, W
Computation	THD, DC, 1-50 Harm, 1-50 InHarm, 1-35 HiHarm, 1-50
Voltage harmonic	THD, DC, 1-50 Harm, 0-49 InHarm, 1-35 HiHarm, 1-50 SubHarm
Current harmonic	THD, DC, 1-50 Harm
Harmonic power	Ia, Ib, Ic, ΣPtotal, ΣQtotal, ΣStotal, 15 minutes
Fluctuation and flickering	PST, PLT, Fluct, Fluct Max
Unbal	V Pos, A pos , V neg , A neg , V zero, A zero, Unbal
Event log	Voltage swell, voltage sags, DIP, surge current, voltage and current distortion out of limit, odd harmonics containing rate out of limited, unbalanced voltage current out of limit, frequency out of limit, PST out of limit, PLT out of limit, long-term voltage interruption, voltage fluctuation deviation
P, Q, S name	
Measurement types	P: Calculate by every 10 cycles S: Calculated by the effective value of voltage and current Q: Calculated by the apparent power, active power
Display	Table charts, trend chart
Measuring range/resolution	According to the range of the voltage and current
measuring accuracy	±0.5%
Arms	
Measurement mode	Calculated by the square root value of 10 cycle
Display mode	Effective current value of each channel
Measuring range/resolution	Current: according to the current clamps Option:5A/50A/100A/500A Current clamps: 1200A/3000A/6000A(Flexible Current Clamp)
Accuracy	0.1% + accuracy of the current clamps
Frequency	
Measurement mode	Calculate by 10 cycles (50Hz) or (60Hz)
Display mode	Measurement by 10 cycles
Nominal frequency/resolution	50.000Hz/0.001Hz or 60.000Hz/0.001Hz
Bandwidth measurement	42.5-57.5Hz or 52.5-67.5Hz
Measurement accuracy	±0.001Hz

Electrical parameters - continued	
Vrms	
Measuring circuit	1P2W/ 2P3W /3P3W/ 3P4W
Basic frequency of the measuring circuit	50Hz
Input channels	4 phase voltage, 4 phase current
Measurement range	Voltage measurement range: standard: 120V, 230V, 400V, 1000V, Max 1000V instantaneous voltage Current measurement range: according to the current clamps, only support the v signal output current clamp
Power factor	
Measurement mode	The ratio of average power to apparent power
Display mode	Real-time data showed
Measurement range/resolution	-1.000-1.000/0.001
Measurement accuracy	±1%
Vfund, Afund, Harmonic power	
Measurement mode	Meet IEC61000-4-7,Analysis time window is ten cycles
Window points	5120 points
Display mode	Form figure, trend charts, histograms
Number of measurement	1-50 Times
Measurement accuracy	Vfund >1%: Error<1% Vfund <1%: Error<0.05% Rated Voltage Afund >3%: Error<1% Afund <3%: Error<0.05% Current range
InHarm Voltage, InHarm current	
Measurement mode	Meet IEC61000-4-7, Analysis time window is ten cycles
Window points	5120 points
Display mode	Form figure, trend charts, histograms
Numbers of measurement	1-16 groups
Measurement accuracy	Vfund >1%: Error<1% Vfund <1%: Error<0.05% Rated Voltage Afund >3%: Error<1% Afund <3%: Error<0.05% Current range
HiHarm Voltage, HiHarm current	
Measurement mode	Meet IEC61000-4-7, Analysis time window is ten cycles
Window points	5120 points every 10 cycles
Display mode	Form figure, trend charts, histograms
Numbers of measurement	1-35 groups
Measurement accuracy	Vfund >1%: Error<1% Vfund <1%: Error<0.05% rated voltage Afund >3%: Error<1%

Electrical parameters - continued	
Voltage SubHarm Current SubHarm	
Measurement mode	Meet IEC61000-4-7, analysis time window is ten cycles
Window points	5120 points every 10 cycles
Display mode	Form figure, trend charts, histograms
Numbers of measurement	1-50 groups
Measurement accuracy	Vfund >1%: Error<1% Vfund <1%: Error<0.05% Rated Voltage Afund >3%: Error<1%
Voltage/current Unbal (pos, neg)	
Measurement mode	3P3W or 3P4W, using three phase of fundamental wave components to calculate
Display mode	Form figure, trend charts, histograms
Measurement accuracy	Voltage unbal: ±0.2% Current unbal: ±0.5%
Voltage fluctuation	
Measurement mode	Calculate by the quadratic mean of half wave.
Display mode	Form figure, trend charts
Measurement accuracy	±1%
IEC Flickering	
Measurement	P short term (Pst) , P long term (Plt)
Measurement mode	According to IEC61000-4-15 Standard to calculate Pst (10 mins) Plt (2 hours)
Display mode	Form figure, trend charts
Measurement range	0-20
Measurement accuracy	±5%
Surge current	
Measurement mode	Half-wave RMS of current is higher than set value and sustain time is 10ms-1min
Display mode	Maximum of the surge current and surge current wave
Measurement accuracy	0.10%
Voltage swell, Voltage sags, DIP	
Measurement mode	Swell: When half-wave RMS of voltage is higher than set value and sustain time is 10ms-1min, judged as swell. Sags: When half-wave RMS of voltage is lower than set value and sustain time is 10ms-1min, judged as sags. DIP: half-wave RMS of voltage is higher than set value and sustain time is 10ms-1min, judged as DIP
Display mode	Swell, sags, DIP wave sustain time, extent and so on.
Measurement accuracy	0.10%

Electrical parameters - continued	
Power supply	
Voltage input	110V-240V
Adapter output	15V, 3A
Battery	Rechargeable nickel metal hydride, 4500mAh
Battery working time	4h
Battery recharging time	5h (Environment temperature 25°C)
Power saving facility	LCD backlight brightness is adjustable, standby time is adjustable
Display	
Size	112.8 x 84.6mm
Color	260000 color
Resolutions	640 x 480
Brightness	Max 350 cd/m2 (Typ), brightness is adjustable
Contrast	500:1 (Typ)
Visual angle	70/70/50/70 (Typ.) (CR ≥10) (Left/ Right/ UP/Down)
Store	
Type	TF card (inbuilt)
Size	8G
Standards	
Measurement method	IEC 61000-4-30
Measurement performance	IEC 61000-4-30 A LVL
Flickering	IEC 61000-4-15
Harmonic	IEC 61000-4-7
Safety	
Standard	GB 4793.1-2007/IEC 61010-1:2001: "Measurement, control and laboratory electrical equipment safety requirements", first part: general requirements.
MAX voltage of phase angle input	CAT III 1000V/CAT IV 600V
Mechanical parameters	
Dimensions (W×D×H) (mm)	263x168x65
Weight (kg)	2
Environmental conditions	
Working environment	0°C to +45°C, humidity below 90rh%
Storing environment	-20°C to +50°C, humidity below 95rh% (non-condensing)

Current clamp(option)

MODEL	CTS5	CTS100	CTS500	CTS3000	CTS6000
Appearance					
Range	5A	100A	500A	3000A	6000A
Measurement Range	0.5A-50A	50A-100A	100A-500A	500A-3000A	6A-6000A
Output Voltage(AC)	100mV/A	1mV/A	1mV/A	100mVk/A	100mV/kA
Accuracy	±0.3%rdg	±0.3%rdg	±0.3%rdg	±1%rdg	±1%rdg