

PQube® 3 Power Analyzer



Overview

The PQube 3 Power Analyzer series are Class A certified, high-speed revenue-grade power analyzers that identify, measure, and record in real-time all power quality disturbances and environmental process parameter data.

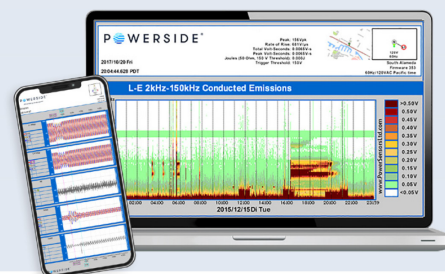
PQube 3 Power Analyzers boast an impressive number of standard features including 4-quadrant ANSI Class 0.2 revenue-grade energy on 8 single-phase channels, alarms, and push reporting.

PQube 3 Power Analyzers are built sturdy and compact, the size of a Rubik's cube. It auto-detects the mains frequency, wiring configuration and nominal voltage. Install them anywhere you need power analyzed in production equipment, data centers, or harsh environments.

Features

- Connects directly to voltages up to 690 V
- Certified for Class A power quality as per IEC 61000-4-30 Ed3
- Monitors DC power and process parameters with four additional AC/DC analog channels
- Detects and records high-frequency impulses at 4 MHz
- Measures in real time and records 2 kHz - 150 kHz emissions
- No software to install, built-in web and email server
- 32 GB of internal flash memory, holds years of data

Results



- Real-time readings via protocols
Modbus, SNMP, BACnet, DNP3.0
- Event recordings and graphs
Text, CSV, GIF, and IEEE 1159-3 PQDIF
- Daily, weekly, monthly, trends and graphs
Text, CSV, GIF, and IEEE 1159-3 PQDIF

Technical Specifications

TECHNICAL SPECIFICATIONS	
Dimensions (L x W x H)	4.33 in X 2.89 in X 3.08 in (11.0 cm X 7.34 cm X 7.82 cm), 1.8 in (3.5 cm) DIN rail mountable
Weight	10.5 oz (300g)
Operating Environment (Temp., Hum., Alt.)	-4 to 149° F (-20 to 65° C), 131° F (55° C) with PM2 AUX load, 5 - 95% RH (inside use), <2000 m above sea level (for EMC immunity, overvoltage, and other conditions, see full specs)
Power Supply (AC)	24 VAC ±10% at 50/60/400 Hz, 1.5A max (Powerside's PM1 and PM2 modules supply PQube 3 Power Analyzer compatible power at 100 to 240 VAC 50/60 Hz, and 120 to 370 VDC)
Power Supply (DC)	±24 to 48 VDC ±10% (polarity independent), 1A max. Power over Ethernet (PoE) compatible
Internal Memory	32 GB (holds over a year of data, depending on number of recorded events)
Data Backup	External microSD Card (not included) or USB 2.0 thumb drive
Clock Synchronization	SNTP, NTP
Output File Types	Text, GIF, CSV, and IEEE 1159-3 PQDIF
Communication Ports	Ethernet RJ45 10/100 (optional external wireless or cell modem)
Communication Protocols	Modbus/TCP, DNP 3.0, SNMP with traps, BACnet, FTP or HTTP (secure FTPS and HTTPS), and email

Measurement Functions

VOLTAGE	
Sampling Rate	512 samples per cycle at 50 Hz / 60 Hz (applies to voltage, current, and analog channels)
Number of Inputs	4 + Reference to earth (L1, L2, L3, N, E)
Range	0 - 750 VAC (L-N), 0 - 1300 VAC (L-L), impedance: 4.8MΩ
Voltage Magnitude*	L-L, L-N, L-E, and N-E. RMS over 1/2 cycle (Urms 1/2)
Frequency*	50 Hz, 60 Hz, 400 Hz, or 16.67 Hz
Unbalance (negative and zero sequence)*	IEC, GB, and ANSI methods
Flicker (Pinst, Pst, and Plt)*	IEC 61000-4-15
Voltage Harmonic & Interharmonic*	Volt or %H1, IEC 61000-4-7 Class 1, order up to 50 th
Total Harmonic Distortion (THD)	%, IEC 61000-4-7
High Frequency Impulse (voltage)	Records transient pulses on one channel (L1-E, L2-E, L3-E, or N-E) at 4 MHz sampling, or all 4 channels at 1 MHz, range: ± 6 kV
Conducted Emissions (2 - 9 kHz)*	Volts for L1-E, L2-E, L3-E : resolution 200 Hz bins, range 0 to 60 Vpk
Conducted Emissions (8 - 150 kHz)*	Volts for L1-E, L2-E, L3-E, and N-E: resolution 2000 Hz bins, range 0 - 60 Vpk



CURRENT	
Number of Inputs	8 inputs, differential. I1 to I8 Range: 0.333Vrms, 10Vpk, 0 - 6000 Amp with CTs, impedance: 33.3 kΩ
Current Magnitude*	RMS refreshed 1/2 cycle (Irms 1/2)
Peak Current	RMS over 1 sec, 1 min, or user defined (3 min to 1 hr)
Unbalance (negative and zero sequence)*	IEC, GB, and ANSI methods
Current Harmonics & Interharmonics*	Amp, order up to 50 th
Total Demand Distortion (TDD) or	Amp, IEC 61000-4-7
Total Harmonic Demand Distortion (THDI)	%, IEC 61000-4-7

POWER	
Number of Channels	8 calculated channels. I1 to I8, calculated with either L1-N, L2-N, or L3-N voltages
Total Power	Up to two 3-phase loads
Peak Power	Intervals: 1 sec, 1 min, or user defined (up to one hour)
Reactive Power	VAR (per-phase and total)
Apparent Power	VA (per-phase, peak, and total)
Power Factor	TPF or DPF method (per-phase and total)

ENERGY	
Number Of Channels	8 channels. I1 to I8 calculated with either L1-N, L2-N, or L3-N voltages
Energy (Import, Export, & Net)	kWh (per-phase and total) Accuracy certified ANSI C12.20 Class 0.2 and IEC 62053-22 Class 0,2S
Reactive Energy (Import, Export, And Net)	kVARh (per-phase and total)
Apparent Energy	kVAh (per-phase and total)



ANALOG	
Number Of Inputs	4 single ended or 2 differential (A1, A2, A3, A4, E) Range: Low: ± 10 VDC, High: ± 100 VDC
Analog Magnitude	AN1-E, AN2-E, AN3-E, AN4-E or differential AN1-AN2, AN3-AN4 RMS refreshed 1/2 cycle
Power & Energy Configuration (Optional)	Power and energy meter 1 (AN1 X AN2), power and energy meter 2 (AN3 X AN4)

DIGITAL	
Number of Inputs	1 differential input (D+, D-). Digital threshold 1.5 V \pm 0.2 V typical

ENVIRONMENT SENSORS	
Number of Inputs	2 ENV2 probe inputs (USB2, USB3). Uses Powerside's ENV2 EnviroSensor probe
Temperature	-4 to 176° F (-20 to 80° C)
Humidity	0 to 100 % RH
Barometric Pressure	Resolution better than 0.001 hPa
Acceleration (x, y, and z)	(x, y, and z) ± 2 , ± 4 , or ± 8 gravity ranges, trigger on shock/vibration, seismic, or tilt

RELAY	
Number Of Outputs	1 output, trigger programmable
Activation Mode	Activated on sag/swell, over/under frequency, overcurrent, inrush, waveshape change high frequency, impulse, snapshot, and digital/analog events
Rating	RLY1 - 30 V AC or DC, 300mA max, activates for event duration or 3 seconds (whichever is longer), 20 ms delay

* Meets or exceeds IEC 61000-4-30 Ed. 3 Class A

Order Information

Part Number: PQube3-PQ-E08N-0000-XXXX

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