

# PQube® 3 Power Analyzer



## 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

## 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.

## 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	
<b>Dimensions (L x W x H)</b>	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
<b>Weight</b>	10.5 oz (300g)
<b>Operating Environment (Temp., Hum., Alt.)</b>	-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)
<b>Power Supply (AC)</b>	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)
<b>Power Supply (DC)</b>	±24 to 48 VDC ±10% (polarity independent), 1A max. Power over Ethernet (PoE) compatible
<b>Internal Memory</b>	32 GB (holds over a year of data, depending on number of recorded events)
<b>Data Backup</b>	External microSD Card (not included) or USB 2.0 thumb drive
<b>Clock Synchronization</b>	SNTP, NTP
<b>Output File Types</b>	Text, GIF, CSV, and IEEE 1159-3 PQDIF
<b>Communication Ports</b>	Ethernet RJ45 10/100 (optional external wireless or cell modem)
<b>Communication Protocols</b>	Modbus/TCP, DNP 3.0, SNMP with traps, BACnet, FTP or HTTP (secure FTPS and HTTPS), and email

## Measurement Functions

VOLTAGE	
<b>Sampling Rate</b>	512 samples per cycle at 50 Hz / 60 Hz (applies to voltage, current, and analog channels)
<b>Number of Inputs</b>	4 + Reference to earth (L1, L2, L3, N, E)
<b>Range</b>	0 - 750 VAC (L-N), 0 - 1300 VAC (L-L), impedance: 4.8MΩ
<b>Voltage Magnitude*</b>	L-L, L-N, L-E, and N-E. RMS over 1/2 cycle (Urms 1/2)
<b>Frequency*</b>	50 Hz, 60 Hz, 400 Hz, or 16.67 Hz
<b>Unbalance (negative and zero sequence)*</b>	IEC, GB, and ANSI methods
<b>Flicker (Pinst, Pst, and Plt)*</b>	IEC 61000-4-15
<b>Voltage Harmonic &amp; Interharmonic*</b>	Volt or %H1, IEC 61000-4-7 Class 1, order up to 50 <sup>th</sup>
<b>Total Harmonic Distortion (THD)</b>	%, IEC 61000-4-7
<b>High Frequency Impulse (voltage)</b>	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
<b>Conducted Emissions (2 - 9 kHz)*</b>	Volts for L1-E, L2-E, L3-E : resolution 200 Hz bins, range 0 to 60 Vpk
<b>Conducted Emissions (8 - 150 kHz)*</b>	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 <sup>th</sup>
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: $\pm 10$ VDC, High: $\pm 100$ 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) $\pm 2$ , $\pm 4$ , or $\pm 8$ 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

## Contact Us

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