PQube® 3 Power Analyser

Features

- Auto-detects mains frequency, wiring configuration, and nominal voltage

- Connects directly to voltages up to 690 V

- Certified for Class A power quality as per IEC 61000-4-30 Ed3

- Computes 4-quadrant ANSI Class 0.2 revenue–grade energy on 8 single-phase channels

- Monitors DC power and process parameters with 4 additional AC/DC analog channels

- Detects and records high-frequency impulses at 4 MHz

- Measures in real time and records 2 kHz to 150 kHz emissions

- No software to install, built-in web and email server

- 32 GB of internal flash memory, holds years of data

PQube 3 Connects in Minutes. Delivers Real Time Data in Seconds.

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

PQube 3's boast an impressive number of standard features including 14 energy metering channels, 4-quadrant metering, alarms, and push reporting.

PQube's are built sturdy and compact, the size of a Rubik's cube. Install them anywhere you need power analyzed in production equipment, data centers, or harsh environments.

Results

- **Real-time readings via protocols**
  Modbus, BACnet, SNMP

- **Event recordings and graphs**
  Text, CSV, GIF, PQDIF

- **Daily, weekly, monthly, trends and graphs**
  Text, CSV, GIF, PQDIF

Specifications

PQube 3 MEASUREMENT FUNCTIONS	
Sampling rate	512 samples per cycle at 50 Hz / 60 Hz (applies to voltage, current, and analog channels)
VOLTAGE (4 inputs, referenced to earth)	L1, L2, L3, N, E | Range: 0 to 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 50th
Total Harmonic Distortion (THD)	%
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 to 9 kHz)*	Volts for L1-E, L2-E, L3-E : resolution 200 Hz bins, range 0 to 60 Vpk
(8 to 150 kHz)*	Volts for L1-E, L2-E, L3-E, and N-E: resolution 2000 Hz bins, range 0 to 60 Vpk
CURRENT (8 inputs, differential)	I1 to I8 | Range: 0.333Vrms, 10Vpk, 0 to 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 50th
Total Demand Distortion (TDD) or Total Harmonic Demand Distortion (THDI)	Amp %
POWER (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 1 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 (8 calculated channels)	I1 to I8 calculated with either L1-N, L2-N, or L3-N (energies are calculated)
Energy (import, export, & net)	kWh (per-phase and total) Accuracy certified C12.20 Class 0.2 and IEC 62053-22 Class 0,2S
Reactive Energy (import, export, & net)	kVARh (per-phase and total)
Apparent Energy	kVAh (per-phase and total)
ANALOG (4 single ended or 2 differential inputs)	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 (1 differential input)	D+, D- | Digital threshold 1.5 V ± 0.2 V typical
ENVIRONMENT (2 ENV2 probe inputs)	USB2, USB3 | Uses Powerside's ENV2 EnviroSensor probe
Temperature	-20 to 80 °C (-4 to 176 °F)
Humidity	0 to 100 % RH
Barometric Pressure	(Resolution better than 0.001 hPa)
Acceleration (x, y, and z)	± 2, ± 4, or ± 8 gravity ranges, trigger on shock/vibration, seismic, or tilt
RELAY (1 output, trigger programmable)	Activated on sag/swell, over/under frequency, overcurrent, inrush, waveshape change, HF Impulse, snapshot, and digital/analog events
	RLY1 | 30 V AC or DC, 300mA max, activates for event duration or 3 seconds | (whichever is longer), 20 ms delay

PQube 3 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), 35 mm DIN rail mountable
Weight	10.5 oz (300g)
Operating Environment (temp., hum., alt.)	-20 to 65 °C (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 compatible power at 100-240 VAC 50/60 Hz, and 120-370 VDC
(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	16 GB (up to 128GB) micro SD card or USB 2.0 thumb drive
Clock Synchronization	SNTP, NTP, (optional) GPS
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

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

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