POWERSIDE™

All our energy, in your power

PQube®3e

Features

- Installs easily with an ultra-compact footprint
- Connects to voltages up to 690V.
- Certified for Class A power quality according to IEC 61000-4-30 Ed3
- Computes 4-quadrant ANSI Class 0.2 revenue-grade energy on fourteen single-phase channels
- 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 2kHz ~ 150kHz emissions
- Auto-detects the mains frequency, wiring configuration and nominal voltage
- Holds years of data and thousands of events via 32GB of internal flash memory

Overview

This compact instrument is simply the best power monitor and real-time sensor you can buy.

Monitors up to four 3-phase circuits.

PQube®3e replaces four traditional revenue-grade meters in addition to providing advanced power quality monitoring.

Plus you get environmental sensing, and external process measurements.

Easy to install, easy to use. Delivers ultra-precise results immediately to your inbox.

RESULTS

- Real-time readings via protocols: Modbus and SNMP
- Events recordings and graphs: CSV, GIF, and PQDIF
- Daily weekly, monthly trends and graphs: CSV, GIF, and

Specifications

Part Number: PQUBE3-PQ-E08N-E06N-0004

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 ~ 750 VAC (L-N), 0 ~ 1300 VAC (L-L), impedance: 4.8MΩ
Voltage Magnitude*	L-L, L-N, L-E, and N-E. RMS refreshed 1/2 cycle ($U_{RMS\ 1/2}$)
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 Impulses	Records HF impulses on one channel (L1-E, L2-E, L3-E, or N-E) at 4 MHz sampling, or all four 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 ~ 60 Vpk
(8~150 kHz)*	Volts for L1-E, L2-E, L3-E ; and N-E ; resolution 2000 Hz bins range, 0 ~ 60 Vpk
CURRENT (14 inputs, differential)	I1 ~ I8, I9 ~ I14 | Range: 0.333Vrms, 10Vpk, 0 ~ 6000 Amp with CTs, impedance: 33.3 kΩ
Current Magnitude*	RMS refreshed 1/2 (1_{RMS} 1/2)
Peak Current	RMS over 1 sec, 1 min, or user defined (3 min ~ 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 (14 calculated channels)	I1 ~ I8, I9 ~ I14 | 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 (14 calculated channels)	I1 ~ I8, I9 ~ I14 | Calculated with either L1-N, L2-N, or L3-N
Energy (import, export, & net)**	kWh (per-phase and total)
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 ~ +80 °C (-4 ~ 176 °F)
Humidity	0 ~ 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 (triggered)	Activated on sag/swell, over/under frequency, overcurrent, inrush, waveshape change, HF Impulse, snapshot, and digital/analog events
RELAY (1 output)	| 30 V AC or DC, 300mA, activates for event duration or 3 seconds RLY1 | (whichever is longer), 20 ms delay

TECHNICAL SPECIFICATIONS	
Dimensions (L x W x H)	4.33 in X 2.89 in X 3.08 in (metric: 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 ~ 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 ~ 48 VDC ±10% (polarity independent), 1A max. Power over Ethernet (PoE) compatible
Internal memory	32 GB (holds over a year of data)***
Data backup	16 GB (up to 128GB) micro SD card or USB 2.0 thumb drive
Clock Synchronization	SNTP, NTP, and (optional) GPS
Output file types	GIF, text, CSV/Excel, and IEEE 1159-3 standard PQDIF
Communication	10/100 Ethernet port (RJ-45) (optional wireless and cell modem)
Communitcation protocols	Modbus/TCP, DNP 3.0. SNMP with traps, FTP, HTTP (secure FTPS, HTTPS), and email

Document name and version number

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