POWERSIDE®

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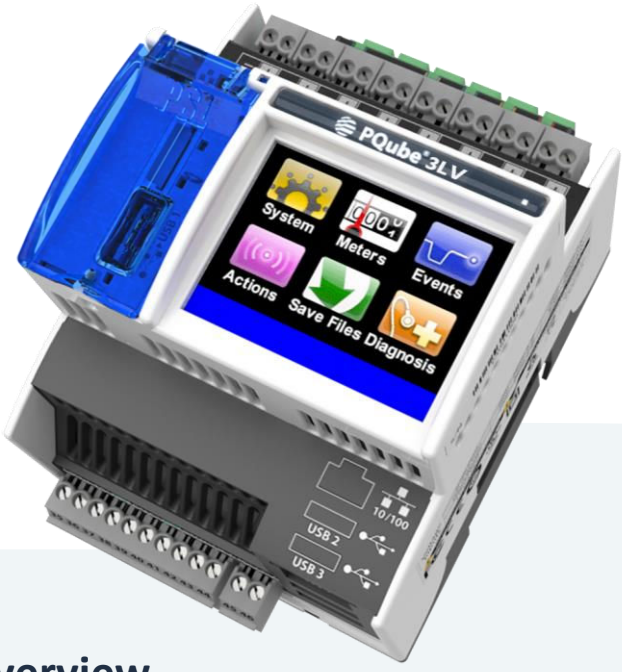
Data Sheet

PQube® 3LV Power Analyzer



Overview

The PQube 3LV Power Analyzer is a Class A certified, revenue-grade power analyzer that measures and records power quality disturbances and environmental process parameter data in real-time.

The PQube 3LV 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.

The PQube 3LV is ideal for connecting medium voltage sensors for distribution grid monitoring and analysis. Install them anywhere you need power analyzed in distribution grids, substations, data centers, or harsh environments.

Features

- Compatible with voltage sensor outputs from 0 to 40 Vac. Ideal for interfacing with MV sensors or low voltage output signals
- Compatible with Rogowski coils (no integrator needed) and traditional current transformers
- Certified for Class A power quality per IEC 61000-4-30 Ed3
- Monitors AC/DC power and process parameters with four additional AC/DC analog channels
- Detects and records 2 kHz to 150 kHz emissions
- No software to install, built-in web and email server

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	Temperature: -4 to +149° F (-20 to +65° C), +131° F (+55° C) with PM2 AUX load Humidity: 5 - 95% RH (inside use) Altitude: <2000 m above sea level
Power Supply	AC: 24 Vac ±10% at 50/60/400 Hz, 1.5A max DC: ±24 to 48 Vdc ±10% (polarity independent), 1A max. Optional PM1 and PM2 modules: 100 to 240 Vac 50/60 Hz and 120 to 370 Vdc Power over Ethernet (PoE) compatible
Internal Memory	32 GB (holds over a year of data, depending on number of recorded events)
Data Backup	USB 2.0 thumb drive; External microSD card (not included)
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)
Inputs	4 + Reference to earth (L1, L2, L3, N, E)
Voltage Range	0 to 28 Vac (L-N), 0 to 48 Vac (L-L), impedance: 1 MΩ
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
Conducted Emissions (2 to 9 kHz)*	Volts for L1-E, L2-E, L3-E : resolution 200 Hz bins, range 0 to 2.3 Vpk
Conducted Emissions (8 to 150 kHz)*	Volts for L1-E, L2-E, L3-E, and N-E: resolution 2 kHz bins, range 0 to 2.3 Vpk

CURRENT	
Inputs	8 inputs (I1 to I8), differential, 0 to 6000 Amp with CTs (Inductive & Rogowski coil) Low Range: 0.333 Vrms High Range: 10 Vpk 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	
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	
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	
Inputs	4 single ended or 2 differential inputs (A1, A2, A3, A4, E) Low Range: Low: ± 10 Vdc or 6 Vac High Range: ± 100 Vdc or 60 Vac
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	
Inputs	1 differential input (D+, D-). Digital threshold 1.5 V ± 0.2 V typical

ENVIRONMENT SENSORS	
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	
Outputs	1 output, trigger programmable
Activation Mode	Activated on sag/swell, over/under frequency, overcurrent, inrush, waveshape change high frequency, snapshot, and digital/analog events
Rating	RLY1 - 30 Vac or Vdc, 300 mA 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-PQLV-E08N-0000-XXXX

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TDS# 880-000135
Version 3 – 07/15/2022

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