PowerXplorer PX5

SPECIFICATIONS

Measured Parameters

- (4) differential voltage inputs, 1-600 Vrms, AC/DC, 0.1% rdg + 0.05% FS, 256 samples/cycle, 16 bit ADC
- (4) current inputs with CTs 1-6000 Arms CT-dependent, AC/DC, 0.1% rdg + CTs, 256 samples/cycle, 16 bit ADC
- 1 MHz High Speed Sampling, 14 bit ADC
- Frequency Range, 10 mHz resolution, 15-20 Hz, 45-65 Hz
- Phase Lock Loop - Generator tracking, Standard PQ mode

Monitoring/Compliance

- IEEE 1159
- IEC 61000-4-30 Class A
- EN50160 Quality of Supply
- Current Inrush/Energization
- Voltage Fault Recording
- Long Term Monitoring w/min/max/avg
- Continuous Data Logging

Power Quality Triggers

- Cycle-by-cycle analysis
- 256 samples/cycle; 1/2 cycle RMS steps
- L-L, L-N, N-G RMS Variations: Sags/swells/interruptions
- RMS Recordings V & I (32 pre-fault, 10K post-fault cycles)
- Waveshape Recordings (32 pre-fault, 10K post-fault cycles)
- Low and Medium Frequency Transients - V & I
- High Frequency Transients - V & I, 3% FS trigger
- Harmonics Summary Parameters
- Cross trigger V & I channels
- RMS Event Characterization (IEEE or IEC)
- Transient Event Characterization

Distortion/Power/Energy

- W, VA, VAR, TPF, DPF, Demand, Energy, etc.
- IEEE 1459 Parameters of distorted and unbalanced
- Harmonics/Interharmonics per IEC 61000-4-7
- THD/Harmonic Spectrum (V,I,W) to 63rd
- TID/Interharmonic Spectrum (V,I) to 63rd
- Flicker per IEC 61000-4-15 (Pst,Plt,Sliding Plt)
- Crest Factor, K Factor, Transformer Derating Factor, Telephone Interference Factor
- Unbalance (max rms deviation) & sequencing components
- 5 User Spec Harmonics or Signaling Frequency
- Vector/Arithmetic/Coincident Parameters

Available Languages

English, Spanish, French, German, Italian, Swedish, Finnish, Chinese, Japanese, Korean

General Specifications

- Size (HxWxD): 12" x 2.5" x 8" (30cm x 6.4cm x 20.3cm)
- Weight: 4.2 pounds (1.9 kg)
- Operating Temperature: 0° to 50° C (32° to 122° F)
- Storage Temperature: -20° to 55° C (4° to 131° F)
- Humidity: 10 to 90% non-condensing
- System Time Clock-Crystal controlled-1 second resolution
- Charger/Battery Eliminator: 90-264 VAC 47-63 Hz
- Display: LCD color touch screen
- Removable Memory: Compact Flash, up to 32GB, 4GB min.

Optional Accessories

- Current Probes: An extensive selection, including:
  - Model TR-2510A 1-10 A; up to 0.47" conductors
  - Model TR-2500A 10-500 A; up to 1/8" diameter or 2.5" x 0.2"conductors
  - Model TR-2520A 300-3000 A; up to 2.56" diameter or 1.97" x 5.3" (bus bar)
- Flexible Current Probes
  - DRANFLEX3000XL/24/36/48; 30/300/3000A available in 24", 36", 48"
  - Hall Effect Probes for AC/DC applications, 150 A or 1500 A
- CT Cable Adapter (CA4300BNC)
- Voltage Cable Accessory Pack (VCP4300)
- Soft Carrying Case (SCC-4300)
- Field Replaceable Battery Pack (BP-PX5)
- External Battery Charger (XBC-PX5)
- Reusable Shipping Container (RSC-4300)
- Weather Resistant Container (ENCL-HH)
- Lockable Portable Case (LPC-PX5)
- Communications Interface (Includes NodeLink®):
  - RS232 FiberOptic Adapter (COMM-RS232)
  - USB FiberOptic Adapter (COMM-OUA)
- LAN-FiberOptic Adapter (COMM-OEA)
- DranView software: Runs under Windows 98, ME, NT, XP, Vista, 7
- CD-ROM Training Program

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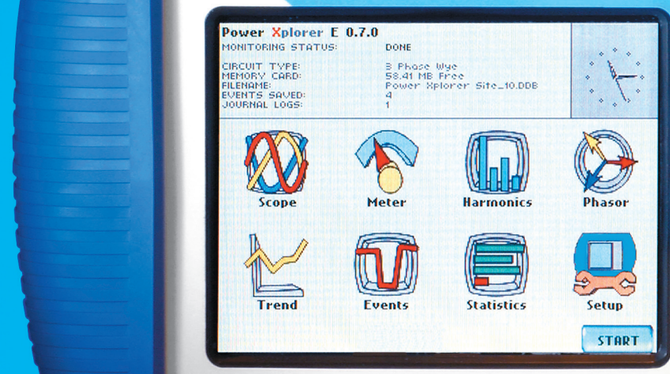
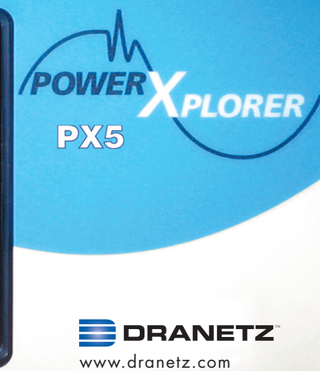
PowerXplorer PX5

Power Quality Analyzer





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Sets the new standard for high performance, advanced measurement capabilities and enhanced usability

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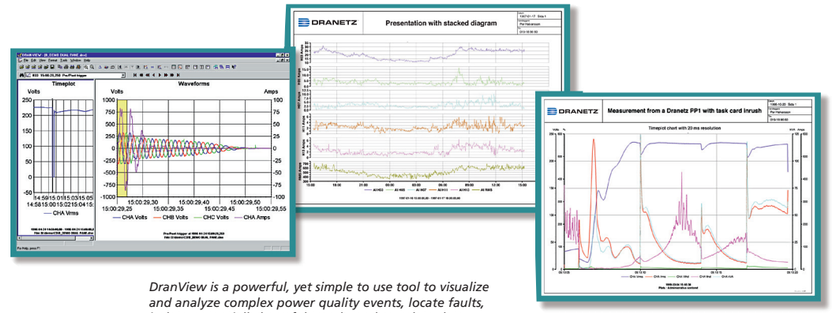
The PowerXplorer™ PX5 integrates the most advanced feature set available in a power monitoring instrument, with an easy-to-navigate, color graphical user interface. With high-speed sampling and data capture (1 microsecond/channel), this 8-channel workhorse simultaneously captures and characterizes hundreds of parameters, using a range of standard and customizable operating modes. The unique measurement capabilities of the PowerXplorer include capture of low-medium-high frequency transients through peak, waveshape, rms duration and adaptive high-speed sampling, as well as power measurements to clearly characterize non-sinusoidal and unbalanced systems.

POWERXPLORER PX5

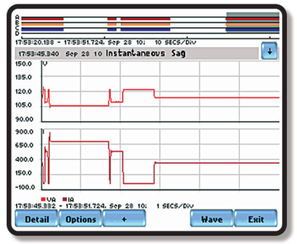


DranView is a powerful, yet simple to use tool to visualize and analyze complex power quality events, locate faults, isolate potentially harmful trends, and correlate data among and across sites.

PowerXplorer users can select from a multitude of data displays such as phasors, waveforms, meters and harmonic spectrums, as well as recording options that include continuous monitoring or report-by exception, and AC and DC measurements for events lasting from a microsecond to an hour. Information presentation options range from quality-of-supply, statistical and trending to the PowerXplorer's unique annunciator "report card" that provides instant classification of events. Remote communications are made easy using RS-232, ethernet or USB options to download data for further analysis and reporting using industry-leading DranView software.

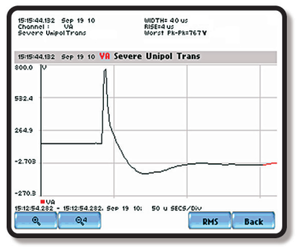
Power Quality Surveys and Diagnostics

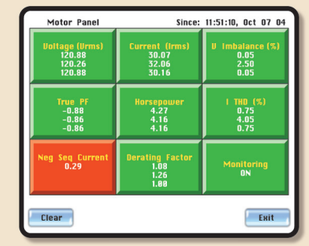
A power quality survey is key to pinpointing and diagnosing problems or negative trends and to effectively implement a reliability-centered maintenance program. By evaluating power quality over a week or longer, baseline conditions and susceptibility to events can be determined so that corrective measures can be implemented. The PowerXplorer has a built-in event characterizer that directly supports troubleshooting and the gathering of survey data—for improving power quality and equipment reliability, as well as for matching the requirements and susceptibilities of that equipment to the incoming supply.



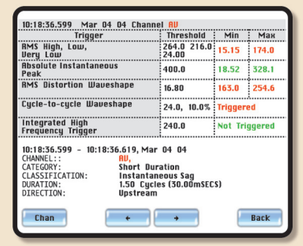
Fast Transient Capture

The PowerXplorer uses digitized high-speed sampling to capture and analyze microsecond-wide transients (Dranetz 658-like and BMI 8800-like). Transients, generated by fast-switching electronics, medical diagnostic equipment, capacitor switching, lightning, transformer energization, and load shifting, are immediately characterized as impulsive or oscillatory and detailed for further analysis. Capable of capturing the complete power quality spectrum, the PowerXplorer provides scope-like display of the entire transient.





Unique annunciator screen collects and analyzes a range of motor health parameters to provide advanced warning of factors that could impact motor efficiency and performance.

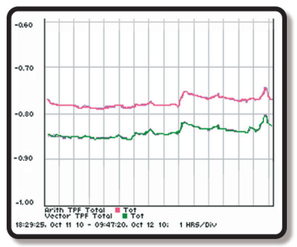


Provides information about the type and severity of the sag and indicates the direction of the sag relative to the monitoring point.

To further speed analysis, Dranetz provides AnswerModules®, intelligent algorithms that help pinpoint the source and cause of power quality problems to the PowerXplorer PX5. These diagnostic and reporting tools are based on decades of analytical experience and benchmarking/troubleshooting work, as they convert raw data into precise answers for rapid decision-making.

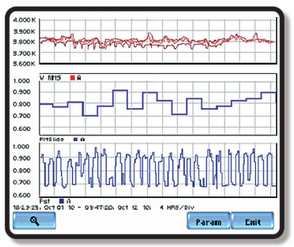
Load Distortion and Imbalance

Rectified-input power supplies plus other non-linear loads have increased from 25% of the total U.S. load to over 65% today. These loads draw current only during part of the waveform, resulting in current distortion, and depending on harmonic impedances, which causes voltage distortion as well. This distortion can have a significant derating effect on equipment such as motors and transformers, causing overheating that shorten equipment life. The PowerXplorer measures the full range of arithmetic, vector and sequencing parameters contained in IEEE 1459, to evaluate distortion and restore balanced loads.



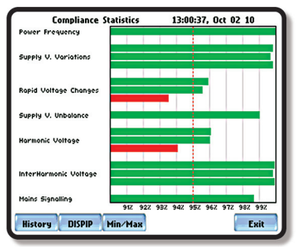
Flicker

The activation of arc furnace, large induction machines and other large loads that produce continuous voltage impulses cause a power quality event called flicker. Typically, flicker occurs on systems that are weak relative to the amount of power required by the load, combined with considerable variations in current occurring over a short period of time. The PowerXplorer captures flicker data per IEC 61000-4-15, which can be further evaluated using Dran-View visualization, analysis and reporting software.



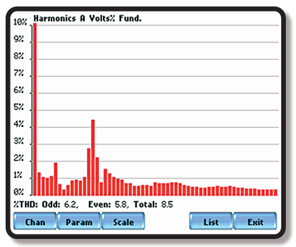
Compliance Monitoring

The PowerXplorer has been designed to meet the most advanced power quality standards, including IEEE 1159, IEC 61000-4-30 and EN50160. A statistical output is produced to quickly verify compliance with international quality-of-supply standards and benchmark power quality. In an instant, the PowerXplorer provides a snapshot of over 13 key parameters, including unbalance, voltage variations and harmonics.



Harmonics

As the sensitivity of power electronics increases, equipment ranging from HVAC systems, personal computers and copiers to computerized process equipment and manufacturing systems are susceptible to harmonic pollution. In fact, harmonics can cause small, almost imperceptible variations in performance that aggregate to effect significant long-term damage. Current harmonics generated by a source can pollute the entire power system without being affected itself. The PowerXplorer captures detailed harmonics, interharmonics and subharmonics to effectively trouble-shoot the complex problems caused by these events.



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