

POWER QUALITY AND HARMONICS ANALYSIS SERVICES



EXPANSEELECTRICAL.COM

The Expanse Advantage

- Experts in the field with advanced power quality tools such as power quality recorders for capturing comprehensive details of power disturbances, including waveforms and trend analysis
- In-house Professional Engineers
- Comprehensive Approach to Electrical System Evaluations
- Over 9,000 Power System Studies Conducted
- Utilizes SKM Systems Analysis Program "PowerTools for Windows" (PTW) HI_Wave module
- Utilizes Operational Technologies' "Electrical Transient Analyzer Program" (ETAP)

Power Quality and Harmonics Analysis Services from Expanse

Poor power quality can negatively impact your production and systems. The Expanse team offers power quality monitoring, modeling, and analysis services. The team utilizes advanced power metering equipment and software to identify power quality issues, including harmonics.

Harmonics can disturb the operations of equipment, especially those with microprocessors. The Expanse team helps identify the source of harmonic distortions, determine if the harmonic voltages and currents are within acceptable limits, and recommend mitigation techniques.

Expanse is an EPC firm that can then implement the best solution for your facility and validate the results after the upgrades.

Capabilities & Solutions

EXPANSE POWER QUALITY CAPABILITIES

Our field service engineers use advanced power quality metering equipment available. After identifying critical monitoring points, we conduct in-depth monitoring of your electrical system.

POWER QUALITY FEATURES:

- Power Interruptions as defined by IEEE-519™

Momentary	Temporary	Sustained
0.5cy - 3sec	3sec - 1 min	>1min
- Undervoltage, Overvoltage, Sags, and Swells
- Transient - Switching Events and Power Surges
- Power Factor Correction
- Unbalance Distribution Loads
- Harmonics - Non-Linear and Linear operations
- Power Quality Meters are capable of recording a large number of power measurements at extremely high speeds. These measurements may include minimum, average, and maximum values for parameters such as:
 - Current and voltage RMS
 - Active power (kW), reactive power (kVAr) and apparent power (kVA)
 - Harmonic spectrum, Total Harmonic Distortion (THD) and Total Demand Distortion (TDD)
 - Power factor and frequency
- Once power quality problems have been identified, our Engineering team will develop a comprehensive root cause analysis and make recommendations for the facility to consider to have Expanse Electrical implement to resolve the issue at your facility.

HARMONIC ANALYSIS CAPABILITIES

Expanse can perform data collection, monitoring, and model your linear and non-linear power system loads and identify harmonic voltage and currents. This allows us to identify harmonic problems, reduce nuisance trips, and develop harmonic mitigating solutions to meet the facilities operating needs.

KEY FEATURES:

- Harmonic load flow
- Harmonic frequency scan
- Capacitor stress analysis
- Voltage and current total harmonic distortion analysis (THD)
- Calculate telephone interference factors (TIF)
- User defined distortion limits or as per IEEE 519™
- Filter design and sizing
- Graphical results for voltage and current wave distortion
- Graphical results for voltage and current frequency spectrum
- Graphical results for impedance frequency scan analysis
- Detailed reports for distortion and frequency scan



Why Expanse?

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| <ul style="list-style-type: none"> • 24/7 Emergency Response • 70 Years of Experience | <ul style="list-style-type: none"> • Turnkey Services & Solutions • Experienced Craftsmen | <ul style="list-style-type: none"> • Local Expertise on National Scale • Customer Support Across Geographical & Operational Spectrums |
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