

# POWER QUALITY AND HARMONIC ANALYSIS

Electrical Engineering Services



## BENEFITS

### Improve Power Quality to Improve Reliability

Power quality is the reliable delivery of electrical energy in a form that enables a data center's equipment to operate properly.

Mission-critical facilities are especially vulnerable to power quality problems such as voltage dips, spikes, surges or short interruptions. Common causes of these problems include lightning strikes, improper wiring and grounding, load variations, switching operations, and non-linear load characteristics.

If not addressed, data center reliability is diminished as power quality problems can lead to malfunction, unexpected shutdown, or premature failure of critical infrastructure.

#### Benefits

- Improve power system quality
- Increase critical system availability and reliability
- Improve operating efficiency



### Isolate and eliminate the root causes of data center malfunctions

Isolating power quality problems can help you improve your data center availability. The experts at Vertiv™ can measure and analyze the sags, surges, transients, harmonic distortion, and other power problems that affect mission-critical equipment.

Our technicians take a close look at voltage, current, power factor, and frequency spectrum characteristics. We compare the actual values of each electrical power characteristic to the ideal values. Based on these multidimensional measurements and our expert analysis, we isolate the root cause of your power quality problems. We then recommend the best strategic solutions to improve power quality and protection for your data center systems.

Our power quality and harmonic analysis includes:

- Visual, mechanical, and electrical inspections
- Data collection and monitoring
- Data analysis
- Comprehensive report

## Visual, Mechanical, and Electrical Inspections

Vertiv™ engineers perform thorough visual, mechanical, and electrical inspections to analyze your electrical infrastructure and identify critical points for power monitoring.

## Data Collection and Monitoring

Our engineers install power quality monitoring equipment at key points in your system and collect data over a pre-determined period, covering appropriate time windows relative to your needs. The data helps us determine the integrity of your grounding system and identify important power quality characteristics.

## Data Analysis

Power quality is a multidimensional and complex measurement. Our NETA-certified experts evaluate your data center's electrical infrastructure by carefully analyzing your power and harmonics data. By referencing several standards from the Institute of Electrical and Electronics Engineers such as IEEE 519, 1100, 1159, 1346, 493 and 446, we look for the root causes of power problems. We then provide recommendations for isolating and eliminating those issues in order to improve power quality.

## Comprehensive Report

Following analysis, you will receive a comprehensive, full-featured summary that identifies critical monitoring points. It includes detailed data records and analysis of results. Our report also includes recommendations for isolating and mitigating power problems such as using special transformers and power conditioning equipment.

## Summary

Through comprehensive power quality studies and harmonic analysis, Vertiv technicians isolate the root cause of power quality problems that disrupt data center operations.

We evaluate voltage, current, power factor, and frequency spectrum characteristics, comparing actual values to ideal values.

Following analysis, you come away with a plan for achieving the power system quality your critical infrastructure demands.

## Ordering Information

To learn more about this service and other Vertiv solutions, visit [VertivCo.com](http://VertivCo.com) or call 1-800-543-2378.