

## Class A Recording

### **What does it mean to have a Class A Power Quality Analyzer?**

The Class A power quality analyzer performs its measurements in compliance with the IEC61000-4-30 standard as well as the IEEE-1159 standard.

### **Why is this important?**

Power Quality instruments are a type of digital recorder. Digital recorders do not perform continuous measurements they take periodic samples every few microseconds. This is known as a discrete measurement. After a particular time intervals these discrete measurements will be aggregated together to determine a single RMS value.

Depending on how these measurements are taken and how the data is aggregated will determine the resulting RMS value. This means that instruments that measure and aggregate the data differently can provide different RMS values.

This created the question of which is the correct value?

In Europe this was addressed in the IEC61000-4-30 standard. This standard defines how an instrument will measure and aggregate the discrete samples. Instruments that comply with this method will be known as Class A instruments. This standard defines the proper measurement and aggregation methods for RMS measurements, Unbalance measurements, THD, Harmonic and Inter-Harmonic measurements and Flicker measurements.

The standard also defines the proper method to measure and aggregate power quality events such as dips / sags and swells. The standard also defines the acceptable methods that can be used to capture transients.

This standard is now being adopted in the United States in the IEEE1159 standard.

All Class A Power Quality instruments will give the same measurements within the allowable error. Modern Revenue meters also measure their RMS values using this Class A method.

In order to get Power Quality measurements that agree across different instrument platforms all the instruments need to be Class A compliant.

Just because an instrument is classified as a Class A instrument this does NOT mean all its measurements are Class A compliant. Some may perform an RMS recording that is Class A compliant. These same

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instruments may record other parameters such as Harmonics and Flicker that are not Class A compliant.

Always be sure the Power Quality Analyzer you use performs all measurement in Class A compliance with the standards otherwise the data you record may not relate to other instrumentation.